

# MENDOCINO COUNTY GENERAL PLAN



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SEPTEMBER 24, 1981  
REVISED DECEMBER 9, 1991





# MENDOCINO COUNTY GENERAL PLAN



ADOPTED BY

MENDOCINO COUNTY BOARD OF SUPERVISORS

SEPTEMBER 24, 1981

Mendocino County Department of Planning and Building Services  
Office: 589 Low Gap Road  
Mail: Courthouse  
Ukiah, CA 95482

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## MENDOCINO COUNTY GENERAL PLAN

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### GENERAL PLAN

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NOTE: The Land Use Element of this General Plan Does not apply to the Coastal Zone. For Coastal Zone land use refer to the Coastal Element.





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# INTRODUCTION







## I. PLANNING INFORMATION BASE

Every planning effort must start by accumulating current pertinent information. In fact, the quality of information gathered, to a large degree, determines the quality of the planning effort. The Mendocino County Environmental Planning and Information Center (EPI Center) is a special collection of information pertinent to land use planning in the county. It was formed in 1979 through a grant from the State Environmental Data Center of the Governor's Office of Planning and Research. The primary purpose of the County Center is to provide quick and easy access to planning-related information for all types of users.

### Scope

A wide variety of subjects are covered, including: land use, water resources, coastal resources, economics, population, data, public services, housing, transportation, public lands, hazards, energy, minerals, fish, wildlife, vegetation, forestry, agriculture, endangered species, rural planning, resource management, and environmental impact analysis. The intent is to centralize commonly needed information while not duplicating other specialty collections in the county, such as the historical archives of the County Museum. Emphasis in Mendocino County, the North Coast, and California.

### Holdings

The Center's holdings include government publications, technical reports, unpublished articles, environmental documents, statistical data, maps, pamphlets, local plans, reference books, case files and a directory of planning-related agencies, groups, and libraries.

### Users

Open to the public, consultants, and other agency staffs. Only extra copies can be checked out. Check-out is usually for a two week period.

### Services

Photocopy service is usually available at the charge of 25¢ per page. Desk space is available upon reservation for use of the collection materials on the premises. Staff is often on call to answer reference questions, direct users to other information collections and sources, and perform limited document searches for a nominal fee. A microfiche reader and printer can also be used. Map copies can be made for a fee if the original is in reproducible form.

### Catalog

For convenient access to documents and unpublished reports, most of the library collection is classified by a specially designed cataloging system. A dictionary catalog provides entries by author, title and subject(s) for each document found on the main library shelves. The only published documents not catalogued are local plans and environmental review studies.



Information on Mendocino County, for instance, can be found by looking up:

- a. "Mendocino County" in the card file, as either the subject or author;
- b. specific area, such as "Willits" or "Coastal Zone";
- c. specific watershed, such as "Eel South Fork" or "Caspar Creek"; or
- d. subject heading, such as "Forest/Timber-Mendocino County", or "Population-Statistics-Mendocino County".

### Library Arrangement

Each catalogued document has a call number, located on the upper left hand corner, which corresponds to its author or issuing agency. All reports by or for an agency will be found together on the shelf. For example, all reports prepared by or for the California Department of Water Resources will have the same letters for the beginning of its call number, representing "C" for California and "DWR" for the agency name acronym. The bottom letters and numbers relate to the first word of the title (in this case, Land Use) and the publication date:

C	is for California
DWR	is for Department of Water Resources
L2	is the "Cutter" number for the first word of the title
1977	is the year of publication

Federal documents would be found under the initial letters "US", followed by the agency abbreviation.

### Local Area Data

Data specific to the county which is valuable for local planning purposes is located in files arranged on a subject and geographic basis. Besides the main "County" file, other files are available for the 14 major geographic areas used as the basis for Citizen Advisory Committees (CAC's) during the County General Plan process. For each area, information is organized by major subjects. Each item of information is filed with a blue cover sheet. This sheet provides cross referencing between areas, watersheds, and subjects and often gives a quality evaluation and other comments. Recent land use data from the County Assessor's files is found on computer print-out tabulations by county and CAC. (See map of CAC areas in Appendix)

### Environmental Documents

Environmental documents pertinent to Mendocino County are indexed, mapped and shelved separately from the other documents. This collection includes Environmental Impact Reports (EIR's), Negative Declarations, Environmental Assessments and Environmental Impact Statements (EIS's) for plans and projects within the county. Indexing is by subject(s), author, sponsor, and title with a unique number assigned to each report. Shelf arrangement is in chronological order by index number. A county map also indicates the location of each project, with larger scale maps available for the more populated areas of Ukiah and Fort Bragg. Both draft and final reports are kept.

## Mendocino County/City Plans

General and special plans for Mendocino County and the cities of Fort Bragg, Point Arena, Ukiah, and Willits are located in labeled pamphlet boxes. These include local area (CAC) plans, General Plan elements, the county transportation plans, and the county solid waste management plan. Draft plans are kept for historical reference.

## Other General Plans

General Plans and elements from other counties and cities in California are arranged in alphabetical order. They can provide useful examples of land use planning methods being applied in other parts of the state.

## Pamphlets

General information not appropriate for cataloging can be found in "Pamphlet" files by subject. Included here are brochures, pamphlets and newsletters on a wide range of current subjects of interest in the county (e.g., solar energy, aquaculture). Extra copies are available for the taking.

## Directory

The names and addresses of agencies, libraries and groups which may be used in information referrals are listed in a card file in alphabetical order. Key contact people and phone numbers are provided when available. This directory is part of the "Environmental Data Evaluation Network" (EDEN) and is kept as current as possible.

## Maps

An extensive collection of maps of the county is found in the Map Room. Various scales are available. Maps can be located by subject (e.g., Flood Hazard Boundary Maps, Geology, Land Use) or by area (e.g., Ukiah, Comptche). An inventory of maps by geographic planning area (CAC) is also listed in the Local Area Files under "Topography". Be sure to ask the mapping technicians for assistance with the Map Room.

Composites of certain features have been mapped for portions of the county, such as a Biological Resources map featuring rare and endangered species, natural areas, fish spawning streams, and critical wildlife habitat. A limited number of aerial photographs, including U.S.G.S. orthophotoquads and some infrared photos, are in the collection. Copies of maps in reproducible form can be made for a small fee.

## Case Files

Site specific information is often developed for project proposals which are located in "case files". These files are referenced by Case file and Assessor's parcel number. Older files are on microfiche and are accessed through the microfiche reader and printer.



## Reference Books

Some library reference books are available for use on the premises. These include the California Water Atlas, the Federal Regulatory Directory, and the Catalog of Environmental Resource Data held by State Agencies.

The materials contained in EPI-Center have provided the data base for the recommendations herein. As such the Plan represents the inclusion of selected material by reference. Due to the unique cataloging system, individuals may request the various reference materials for the Plan by area, author, title, topic, or issuing agency. Rather than provide a complex footnoting system, questions regarding specific data or reference material can be answered by directly asking Planning staff.

Refinement of the information system will continue. One of the major tasks to be accomplished is equalizing data quality throughout the county.

## II. METHODOLOGY FOR POLICY DETERMINATION

The Board of Supervisors of Mendocino County is responsible for adopting and implementing policy on all issues and findings required for the operation of County government. Policy development in the planning process is a very important segment of the overall policy format of the County. Land use decisions have historically been among the more important decisions made by any governmental jurisdiction.

Fundamentally, the General Plan update is grounded on two basic premises. These two premises are that 1) natural resources should be protected and available for use, and that 2) public service delivery cost/revenue efficiencies should be maximized. The California Environmental Quality Act requires attention to the various cultural activity impacts of man upon the resource base. In addition, since any action that is implicit to land development requires efficient ongoing support for various public services by government, the plan contains a discussion of public service costs required by such land development. It is therefore the primary task of the Planning Commission and the Citizens Advisory Committees to review and recommend land use related policies to the Board of Supervisors based upon determinations of resource impact and public service impact. In the plan that follows this introduction, the reader will find a format that the Planning Department believes reflects a logical step-by-step process for policy determination.

Basically, goals and policies follow after the identification of issues and findings. Given a set of natural resource, housing, and public service topics, a list of issues has been developed. Issues have come from not only the CAC members, but have been collected from the general public at large, newspapers, members of state and federal agencies who have land use management responsibilities in this County, and from the Planning Staff. Issues are addressed through statistical or factual findings where possible. Together with the desires of the county's citizens, these findings lead to goals which the county seeks to accomplish. Each goal must then be translated into policies which implement it. Policies are therefore the product of the plan. Policies not only reflect County direction on issues, but establish actions, as required, for County service and regulations. This dual function of policy will establish the processes of activity for the various sub-units of government to follow.

The process of planning is extremely important because it provides us with a tool for continual evaluation of objective information and findings and the continual surfacing of issues and refinement of goals and policies. Evaluation of information will bring before concerned citizens and decision makers in the County data which can, in one way or another, recommend action to amend or adjust the plan. It is the Planning Department's recommendation, therefore, that the policies that have evolved and will continue to evolve out of the process of this plan update be used by the Board of Supervisors for General Plan implementation.

### III. WATERSHED PLANNING

The units or planning areas used during this General Plan formation were somewhat arbitrary based on previous planning areas and political and demographic data. Another approach to rural planning is the use of natural boundaries known as drainage basins or watersheds. In a river dominated county like Mendocino, this approach has a great deal of value and may be the one used for future planning efforts.

A drainage basin, or watershed, is defined by the noted hydrologist Luna Leopold as "the area of land that drains water, sediment, and dissolved materials to a common outlet at some point along a stream channel." This definition could include basins of a wide range in size, from the drainage of a small, ephemeral stream to that of regional scale like the multi-county North Coast river system. Watershed boundaries are usually ridgelines, which are easily identified on topographic maps.

Mendocino County can be broadly divided into three major drainage basins: Eel, Russian and Coastal. These areas are quite large, however, and can be subdivided into watersheds of a more practical size and with more local familiarity. These smaller watersheds are illustrated in Figure 2.

Historically, most towns in the county were located along streams or rivers for access to a dependable water supply. These towns are located entirely within one watershed. A few other communities have spread beyond the watershed boundary or have located on ridgelines. These areas, like other communities, are still separate entities whose needs must be specifically addressed in any plan. For instance, the community of Albion still has its own unique needs which must be identified and planned for within the Albion River watershed, just as it did within the South Central Coast planning area. Similarly, the Dos Rios area, at the juncture of three watersheds, is a separate community which would need to be considered as a unit, even though divided by watershed boundaries. Where major watersheds are very sparsely populated (i.e., North Fork Eel, Lower Eel), the residents of those basins may want to join with adjacent watersheds for planning efforts.

Planning on a watershed basis is valuable for several reasons. First of all, it is on this level that natural and human-related actions most directly affect one another and where land use conflicts can be identified. Hillslopes, gullies, rivers, groundwater bodies, urban storm drains, and irrigated fields are all connected as parts of a drainage basin. If upstream users of a river deplete the flow or damage its water quality, then downstream users will suffer. Adequate water quantity and quality are essential to all land uses within this county. Besides water, air quality tends to be affected by the same basin divides, except that air pollution moves down wind rather than downstream.

Secondly, many resource-related agencies are using watershed units in their planning and data collecting. The State Water Resources Control Board and the California Department of Water Resources have standardized their watershed boundaries throughout the State and store their water quality and quantity data in computer files by watershed. As a result, the watersheds depicted in Figure 2 were chosen to reflect the boundaries and identification numbers used by these two agencies. Similar basins are also used by the U.S. Geological Survey and the Army Corps of Engineers in their water studies.



**NORTH  
COASTAL  
(F13.A)**

Rockport

**SOUTH  
FORK  
EEL  
(F11.C)**

LOWER

**EEL  
(F11.D)**

**NORTH  
FORK  
EEL  
(F11.E)**

**MIDDLE  
FORK  
EEL  
(F11.G)**

**UPPER  
EEL  
(F11.F)**

**TEN  
MILE  
(F13.A)**

**NOYO  
(F13.B)**

**BIG  
RIVER  
(F13.C)**

**ALBION  
(F13.D)**

**NAVARRO  
(F13.E)**

**RUSSIAN  
(F14.C)**

**COLD  
SPRINGS  
(F13.F)**

**GARCIA  
(F13.G)**

**SOUTH  
COASTAL  
(F13.H)**

**GUALALA  
(F13.H)**

**WATERSHEDS  
BOUNDARIES**

Drawn By VWV  
Date January 1980  
Mendocino County  
Planning Department

Water supply is one of the major factors to determine the amount and type of use which can occur in an area, and watershed planning can incorporate these agencies' data in estimates of current and future water supplies and demands.

Most resource management agencies find watershed units convenient for their work, including the California Department of Fish and Game, the U.S. Fish and Wildlife Service and the U.S. Forest Service. A special interagency brush management project headed by the California Department of Forestry is currently developing precise sub-watershed maps of the Middle Fork Eel River Basin.

Mendocino County is fortunate to have two watersheds which are designated research areas designed to collect baseline data. Pristine Elder Creek a tributary of the South Fork Eel, is a National Landmark stream, one of about 70 in the country, and is regularly monitored by the U.S. Geological Survey. Caspar Creek, in the Jackson State Forest, has been studied since 1960 by both the California Department of Forestry and the U.S. Forest Service to measure the effects of logging and road building on certain stream characteristics. Although the watershed was clear-cut and burned in the late 1800's, the land recovered sufficiently to support good stands of second growth conifers. The North Fork of the Caspar was selected as the control watershed while the South Fork basin was chosen to be selectively harvested for the paired watershed study.

In summary, drainage basins provide many advantages: objective boundaries, practical and flexible sizes, illustration of land use relationships, and standardized units for data collection and research. There is considerable overlap between the present planning units and watersheds. Some CAC planning areas are entirely in one watershed while others cover portions of 5 watersheds. Most watersheds include portions of more than one CAC area. Highly populated watersheds like the Russian River Basin can be divided into sub-basins, such as the Forsythe and East Fork drainages to parallel the Redwood Valley and Potter Valley areas. Information logged into the Department's CAC area files this past year has been cross-referenced by watershed, where appropriate, to facilitate the transition from political units to watershed units. Data will still be gathered for individual communities (e.g., census data for Round Valley), but will also be referenced by watersheds.

#### IV. A CAUTION ON THE USE OF THE GENERAL PLAN

The map and classifications summary provide an overview of the goals and policies contained within the nine elements of the General Plan. The map obviously can depict only those goals and policies that lend themselves to graphic representation. The user should be aware that a complete understanding of the General Plan cannot be obtained from a review of the plan map and classifications summary.<sup>1</sup> The goals and policies of each of the nine General Plan elements must all be considered in making determinations of General Plan intent.

- 
1. At the time of this printing, several error and omission items, including some land use map changes, have been brought to the attention of the Board of Supervisors and integrated into this document.

# I. LAND USE





MENDOCINO COUNTY GENERAL PLAN

LAND USE ELEMENT

ADOPTED BY

MENDOCINO COUNTY BOARD OF SUPERVISORS

MAY 9, 1967

REVISED:

NOVEMBER 27, 1978

SEPTEMBER 24, 1981

NOVEMBER 26, 1984

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Mendocino County Department of Planning and Building Services  
Office: 589 Low Gap Road  
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Ukiah, CA 95482





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## I. LAND USE ELEMENT

### A. Overview/Environmental Setting

#### 1. Topography

Mendocino County contains 2,246,000 acres or 3,510 square miles within its rugged boundaries. It is naturally bounded on the west by the Pacific Ocean and on the east mainly by the mountainous divide between the North Coastal Basin and the Sacramento River Basin, with the width varying from 35-60 miles. The county extends approximately 80 miles north to south (Point No Pass to Gualala River, or Hammerhorn Ridge to the Geysers).

Within 20 miles of the ocean, the landscape rises to 3,000 feet in a series of northwest-southeast trending ridges paralleling the coast, and irregularly alternating with narrow valleys. These features reflect the geologic structures of the region, such as the San Andreas Fault in the southwest corner near Point Arena and the Maacama Fault extending from Sanel Valley to Long Valley. The alluvial valleys are at 1000 to 1500 feet elevation in the central part of the county, and drop to 500 feet at the points where the Eel and Russian rivers leave the county. Maximum elevations are found in the mountainous north-eastern part of the county, where Anthony Peak reaches to almost 7,000 feet.

#### 2. Geology

Geology is a major consideration for land use, public safety, siting of public works, soil productivity, road construction, and water supply quality and quantity. Serious hazards, such as landslides, earthquakes, and ground breakage from faulting, are related to the geologic characteristics of the landscape. A description of the distinctive geology of Mendocino County is important for understanding the opportunities and limitations of planning its land use.

Mendocino County is located within the geologically youthful Coast Range Province of northwestern California. The major geologic units in the county, from west to east, are as follows:

- a. A coastal terrace area known as the Gualala formation of Miocene, Eocene, and Cretaceous marine shelf deposits, consisting mostly of sandstone, shale and conglomerate.
- b. The coastal belt Franciscan, consisting of Tertiary and Cretaceous bedded marine sedimentary rocks east of the San Andreas fault zone.
- c. The Franciscan Complex, a large area of Jurassic and Cretaceous sedimentary, metamorphic, and igneous rocks. This unit has been intermingled on varying scales by pervasive shearing and the formation of melanges (a mixture of rock fragments, blocks, or slabs of various ages and origins).



- d. South Fork Mountain Schist, member of the Franciscan Complex, consisting of metamorphosed Franciscan rocks.

The coastal region geology is described in the county's Local Coastal Plan report. The San Andreas fault separates the two main bedrock groups. Exposed rocks to the east of the fault consist of the Cretaceous "coastal belt" of the Franciscan Assemblage, which is apparently younger than the inland complex. These rocks are marine sediments of sandstone, shale and conglomerate. To the west are granitic basement rocks overlain by the Cretaceous age Gualala formation plus Tertiary marine and volcanic units; these rocks are within the structural unit termed the Gualala block. The Gualala block and coastal belt rocks are covered in places by Quaternary deposits of marine terraces, dunes, and stream alluvium. The remnants of a series of marine terraces extend from the steep rocky cliffs at the ocean's edge to a maximum elevation of 650 feet to the east. The most intensive geologic investigation of the coastal zone of Mendocino County has been in the Gualala block and surficial deposits of the coastal belt.

In the Gualala block, the associated soil series are Gualala, Anchor Bay, Mendocino and Noyo, with the latter two soil series developing from the softer rocks. The weakly consolidated sediments of the coastal terrace area form deeply-weathered soils, such as the Mendocino, Caspar, and Goldridge soil series. Some deposits are nearly pure quartz sand and give rise to podzol soils, such as the Blacklock and Noyo soil series. Recent extensive dune sands of reworked terrace and stream alluvium have deposited in the Ten Mile Dunes of Fort Bragg and along the northern coast of the Gualala block.

The Franciscan assemblage is found throughout most of the county, except the coastal fringe and extreme eastern edge. It is structurally more deformed and complex than the coastal belt Franciscan. Its heterogeneous rocks are highly fractured and deformed by folding, faulting, and metamorphism. Rock types consist mainly of sandstone and mudstone with significant amounts of volcanic rocks, serpentinite, chert, and limestone. By far the most prevalent rock type is graywacke, a sandstone, which is usually associated with minor amounts of shale. The volcanic rocks, which are interbedded with marine sediments, are mostly submarine lava flows that are now largely altered to greenstone.

The graywacke sandstone provides the parent material for the dominant soil series in this assemblage. With increasing duration of weathering, the rocks become the Hugo, Josephine, and Sites soil series. When the rocks are richer in calcium they form the Laughlin and Los Osos soil series. The interbedded basalts give rise to the purplish Comptche soil series and the reddish brown Sobrante soil series. The Dubakella, Henneke, Montara, and Cornutt soils form on the serpentinite and peridotite metamorphic fragments of oceanic crust and mantle. The blue clays developed on fault gouge material give rise to the Yorkville soil series, which is characterized by large landslides.

Generally, the Franciscan complex is highly unstable, largely because of the presence of both small and very large faults and shear zones often hundreds of feet wide. The deeply weathered Franciscan assem-

blage contains shale interbedded with more massive rocks, and with a prevalence of serpentinite. These inherently weak structural features, combined with high rainfall, prolonged storms, high peak flows, and rugged terrain, account for the widespread instability and erodibility of the Franciscan assemblage. Consequently, landslides, streambank erosion, and soil creep are common.

The zone of metamorphic rocks in the eastern edge of the County is a southerly extension of the South Fork Mountain Schist. This schist is believed to be a fault along which the rocks of the Franciscan Assemblage were thrust under the rocks of the Klamath Mountains. As the result of schist's properties, the steep east-dipping fault surface and the deep weathering mantle, this schist zone is unstable and landslide prone. The rocks are characterized by Sheetiron and Hulls soil series.

### 3. Climate

The climate of Mendocino County is generally mild and characterized by moist cool winters and warm dry summers. There is little temperature range in the vicinity of the coast, but a moderate range is experienced in inland valleys. Extremes of temperature at inland points range from lows of 5 to 10 degrees to highs of 110 or more, while coastal areas have ranges from 20 to 80 degrees.

Annual rainfall in Mendocino County ranges from slightly less than 35 inches (Ukiah area) to more than 80 inches (near Branscomb). Most of the precipitation falls during the winter part of the year, and only at higher elevation is there substantial snowfall. Rainfall is often from brief, intense rains caused by large storms which move in from the northwest. Virtually no rainfall occurs during the summer months. The average growing season is about 260 days on the coast, 210 in the interior valleys, and 180 days in Round Valley.

The moderate temperatures result in fairly low evaporation rates for this latitude. Relative humidity readings average fairly high along the coast, with 70% to 90% being typical values. They drop to moderate values over inland areas during the summer, with daytime readings falling to around 30% on the average.

Winds along the coast are persistent during the summer, and occasionally become strong over the entire area during the winter. Much of the County, however, experiences only light winds during most of the year. Sunshine averages 45%-65% throughout the year along the coast and during winter and spring over inland areas, but increases to 80% inland during the summer and fall.

#### Area Climates

Four general area climates can readily be identified in Mendocino County, ranging from the coastal bench completely dominated by the influence of the Pacific Ocean to the northern interior climate which is virtually free of coastal influence and has a continental weather pattern.

The four areas have been designated as: Maritime, Coastal, transitional, and Interior.

Many native plants are closely associated with area climates and in general, each area climate has a distinctive complement of plants.

Maritime: This is a narrow strip a few hundred yards to six or seven miles inland from the ocean, which is dominated day and night, winter and summer by ocean influence. There are narrow, daily and seasonal temperature changes. Temperatures seldom reach freezing, even in mid-winter, but the summer temperatures are low. Fort Bragg, Mendocino, Elk and Point Arena are located in this climatic zone.

Coastal: This climate is continuous from north to south. It might generally be called the Redwood Belt. It lies inland from the Maritime Zone, and varies from 8 to 30 miles in depth. Direct ocean influence diminishes with the distance inland. Both daily and seasonal temperature fluctuations increase with the distance inland. Summer fog decreases at the inland edge of the area where the direct temperature-modifying effect of the ocean is evident 75 to 85 percent of the time. Ocean influence rarely pushes over the second or third 2500 foot ridge and is usually stopped by a single abrupt 3500 to 4000 foot range, thus, establishing the inland edge of the coastal area-climate. Comptche and Leggett are found within this zone.

Transitional: Inland from the Coastal area climate, between the coastal and interior area climates, lies an area which may be coastal in character part of the day, or for a week or a month. The climate may then be dominated for various periods by air masses characteristic of the interior. Within the zone the degree of coastal influence is greatly affected by topography. The valley floors in this zone present an almost certain spring frost hazard. Cold air, developed by localized spring radiation frost conditions, is heavy, and drains from higher areas within the valley. Down-canyon air movement may be sufficient to provide air mixing, which modifies the frost hazard. The transitional zone includes Laytonville, Willits, Ukiah, Boonville and Hopland.

Interior: Only a relatively small portion of Mendocino County in the Northeast corner has an area-climate dominated by continental air at least 85 percent of the time. Daily and seasonal temperature fluctuations are relatively wide. The air is characteristically dry and warm in summer. The growing season is short. Round Valley is on the edge of this zone.

#### 4. Hydrology

Mendocino County can be broadly divided into three major drainage basins: Eel, Russian and Coastal. Within each of these basins are sub-basins or watershed units of hydrologic significance. A total of 16 watersheds have been identified within the county, as illustrated in Figure 2. The Eel River Basin is shared with Humboldt, Lake, and Trinity Counties while the Russian River Basin includes Sonoma County.



Surface runoff in all the basins is derived almost entirely from rainfall, although snow does fall in the mountains of the eastern part of the Eel watershed. Streamflow responds directly to the rainfall pattern; high flows will drop quickly without sustaining rainfall. During the dry summer months, streamflow must be supplied from groundwater seepage, channel storage, or reservoir storage. In the Russian River Basin, 93% of the average seasonal runoff occurs in a five-month period beginning in December and ending in April.

The relative contribution of the three major basins to total runoff, based on basin-wide data, is as follows: Coastal-21%, Russian-16%, Eel-63%. Total average runoff is about 10.1 million acre-feet per year.

Groundwater Basins: The groundwater resources occur in three principal types of aquifers present in the coastal terraces and valleys and in the inland valley alluvium, older terraces, and the Franciscan assemblage. Ten groundwater basins are found in the county. In the Eel River Basin are Little Lake Valley, Long Valley (Laytonville) and Round Valley; the Mendocino Coast unit includes Fort Bragg terrace, Anderson Valley, and Point Arena; Russian River Basin has Potter Valley, Ukiah Valley and Sanel Valley.

The vast majority of wells recorded with the state are very low producers except in the younger alluvium adjacent to and underlying the stream and river channels. In a few places such as Round Valley, ground water occurs under artesian pressures. In many alluvial aquifers, the supply of groundwater varies seasonally according to the rainfall and runoff conditions.

Water Development: The only major water projects in the county are Van Arsdale Reservoir and Lake Mendocino. Van Arsdale is on the upper Eel River and, in conjunction with Lake Pillsbury in Lake County, is also called the Potter Valley Project. Through the Potter Valley tunnel, an average of 184,000 acre-feet per year (or 39% of the flow) is diverted from the Eel River into the Russian River Basin. Diversion of water and generation of hydroelectricity have been continuous since 1908.

Lake Mendocino was constructed in 1959 on the East Fork Russian River to store the diverted water from the Eel River. It was designed for a capacity of 122,900 acre-feet. Many small dams and reservoirs and stock watering ponds have also been developed throughout the county. Redwood Valley alone has at least 70 small reservoirs or ponds for water supply.

Water Quality: The North Coastal Basin Water Quality Control Plan offers the following description of water quality problems in the County.

The north-coastal region is well-known as a comparatively unspoiled land with abundant clean water, fish and wildlife, and having a vast recreational potential. Yet there are problems within this area as serious as those in the most developed basins of the state. The major problems can be related to the sensitivity of the water uses to be protected; water uses which cannot be supported in many other areas.

Examples of these include anadromous fish spawning and high quality public water supplies requiring little, if any, treatment. Causal factors affecting these and other water uses include land management practices such as logging, construction, sand and gravel operations, wastewater effluent disposal, and construction and operation of reservoirs. In addition, the north coastal region contains a number of areas where excessive siltation occurs naturally because of the unusual combination of high precipitation, deeply incised valleys, and unstable soil conditions. For example, the Eel River basin has the highest recorded average annual suspended-sediment yield per square mile of any river of its size or larger in the United States.

Dissolved minerals are typically low in the north coastal streams and reservoirs. The presence of highly mineralized water in quantities sufficient to impair beneficial uses is limited to a very few locations, one of which is the Outlet Creek area which occasionally exhibits high boron concentrations. Boron values in excess of 3 mg/l have been reported, typically in areas overlying fault zones in the older Franciscan formation. Waters used for irrigation are considered injurious to unsatisfactory for most crops when boron content exceeds 2 mg/l.

Mineral constituents of north coastal streams are dominantly of a calcium bicarbonate classification and are very low in terms of percent sodium. Almost without exception these waters are excellent for crop irrigation. Most of the surface waters sampled in the area are comparatively soft, but total hardness values in excess of 100 mg/l as calcium bicarbonate are encountered occasionally during low flow periods. Seasonal fluctuations in water quality are often pronounced. In some areas, variations in dissolved salt concentration measurements (specific conductance or electrical conductivity) largely reflect the runoff pattern.

Dissolved oxygen values suggest healthy conditions at the stations tested, but some problems have arisen because of low dissolved oxygen values in the Noyo River in past years.

The bacteriological quality of north coastal streams within the Basin is generally not well documented but the bacterial quality in recent years has been basically good. Surveys of the Russian River have in the past shown very high coliform counts.

Groundwater basins within the North Coastal Basin vary in their quality characteristics and in the nature of quality influencing factors. It is difficult to generalize in quality characteristics in particular areas since local differences are sometimes marked depending on the depth of individual wells and underlying geology. It is safe to say that groundwater is generally of good mineral quality, suitable for most beneficial uses.

## B. NATURAL RESOURCES

### 1. Introduction

Mendocino County's rich and diverse natural resources are its finest asset. Favorable climate, productive soils, and clean and abundant water are the essential ingredients toward making these resources so valuable. In 1979, the County was first in the state for the value of commercial salmon caught (at Noyo Harbor), first in the number of deer bagged during hunting season, second in the production of timber, and third in the amount of pears harvested. Its scenery is often promoted in magazine photos and movies, its public parks and forests attract many tourists and recreationists, its clean air is a scarce state resource, its renewable energy sources offer exciting potential, its natural areas provide scientific and educational values, and its vegetation is as diversified as its people.

The natural resources of the County also provide us with both opportunities and limitations for planning. This premise holds true for the entire area: the mountains, coast, foothills, and valleys. By first identifying these resource opportunities and limitations, a sound basis is developed for making later decisions about land use.

Many types of opportunities exist. There are opportunities for fisheries enhancement through habitat improvement, stream clearance, and watershed rehabilitation; for improvement of the quality and productivity of our forests; for protection of agricultural productivity by adopting favorable land use and water policies.

The capability of the soil resource offers both constraints and opportunities. There is a finite amount of useable land for resource production, primarily based on the quality of the soil. High capability lands will yield high production of crops, livestock, and trees, if managed properly. Low capability lands may yield some resource production, but with greater risk of soil erosion and with slower reproduction. How we use the land and where we locate various land uses will be critical to the future productivity of the County's resources. Good resource planning can help us protect the land's productivity and avoid many of the problems associated with use. Good planning is also cheaper and easier than trying to later patch up mistakes that could have been avoided.





## 2. AGRICULTURE

### Issues

1. Loss of agricultural land to nonagricultural uses:
  - a. Irreversible loss of agricultural land, both prime and range, to residential and urban development.
  - b. Parcelization of agricultural land into sizes too small to be economically practical in commercial agricultural production.
  - c. Increased difficulty and liability of daily agricultural operations because of incompatible development intrusion (e.g., dogs, traffic, vandalism)
  - d. Increased pressures to develop agricultural land due to "leap-frog" pattern of growth.
  - e. Commitment to agriculture as a permanent land use or as pre-development "open space" land use.
  - f. Effectiveness of Agricultural Preserve designation (under the Williamson Act) and its tax benefits, especially after Prop. 13, in maintaining agricultural land in production.
2. Impact of agriculture on other uses:
  - a. Impact of agricultural operations (e.g., chemical spraying, noise, dust) on adjacent land uses.
  - b. Improper agricultural practices can have adverse impact on soil, water quality, water table, fish and wildlife habitat.
3. Factors affecting optimum productivity and profitability:
  - a. Inadequate quality or quantity of water for frost protection or irrigation in some areas of the County.
  - b. Poor drainage of certain valley soils.
  - c. Depredation of livestock by wild and domestic animals.
  - d. Limitation of daily operations due to encroachment by non-compatible uses such as schools, homes, etc.; problems with vandalism and theft.
  - e. Comparative production costs for different styles of agriculture.
  - f. Increased energy costs for production and transportation.
4. Increasing competition among agricultural commodities on an international basis.





## Findings

- A) Agricultural production provides a significant contribution to the County's economy and to the state and national production --

In 1980 the total gross value of agricultural production was \$50,377,000 with fruit and nut crops contributing 58% of the total. Agricultural employment has averaged about 1250 people since 1973, with related sales and services contributing even more. Agricultural lands, fruit stands and wineries also encourage tourism in the County. In addition, many residents raise a portion of their own food from their home gardens.

Mendocino County is considered to be a leading California producer of pears and grapes. California produces 91% of the nation's grapes and 45% of its pears.\*

- B) Mendocino County has unique agricultural capabilities --

A unique combination of favorable climate, soils, and water makes certain areas in the County excellent locations for grape growing as well as for other fruit and nut crops. Only 2% of the land in the County is cultivated to fruit, nut and field crops and irrigated pasture. Crops which are specially adapted to the wet valley areas, such as wild rice, are being tested and may also become highly productive. In most years, over half the agricultural income is produced on less than 1% of the county land. This income is primarily from pears and grapes. In the Ukiah area most of the land available and adapted to grapes and pears is in these specialty crops. The coastal area is particularly capable of producing specialized crops, nurseries and quality dairies.

A minimum production of pears and grapes is required to maintain the major agricultural processing plants in the community. These processing plants provide jobs and involve high cost buildings and equipment. A high priority should be placed on maintaining the minimum production required by local processing plants so a maximum of the value and taxes generated by specialty crops accrue to Mendocino County. Grape fields and wineries are a major tourist attraction in addition to producing a renewable resource locally processed.

- C) Agricultural land continues to be converted to other uses --

Farms are generally declining in both number and acreage. According to the U.S. Census of Agriculture, total acreage in farms in the County decreased 26% (from 946,259 to 702,836 acres) between 1969 and 1974, while the number of farms declined from 1007 to 878. All types of farm land declined in amount, but primarily included non-irrigated lands and rangelands.

The present agricultural policies of the County have obviously not been adequate to keep farmland in agriculture, despite a strong protective

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\* For additional facts and figures on Agriculture in the county, see "Agriculture-State of the Resource", available in the Planning Department office.

statement in its Zoning Enabling Plan (adopted in 1956):

"The Board of Supervisors finds that agriculture is a major industry of the County and that for the protection of agriculture and in order to prevent further encroachment upon it by incompatible uses of property and for the general welfare of the County as a whole, there are hereby created classifications within which agriculture shall be encouraged to the exclusion of such uses of land as may be in conflict therewith. Therefore, the provisions of this section shall be liberally interpreted, insofar as they apply to agricultural pursuits and services, and shall not be deemed or construed to permit interference with any normal accessory use conducted in conjunction therewith. It is the intention of this section to provide maximum protection to existing and future agricultural enterprises, and to encourage the highest and best use of the lands so classified for agricultural purposes, including the necessary residential, recreational, educational, public utilities and other similar uses necessary and incidental thereto."

D) Leapfrog development has isolated certain agricultural lands --

Conversion of agricultural land to non-agricultural uses in areas not adjacent to existing development can eventually surround farms with incompatible uses. Such uses tend to make continuance of agricultural operations very difficult because certain associated activities (e.g., dogs, traffic, vandalism) are in direct conflict. While this pattern of development is most noticeable in the Ukiah Valley, other areas of the County have also been affected or have the potential to be similarly affected. Most farmers believe that productive agricultural land and urbanization are not compatible. The new "economic rule" is that an agricultural economy will collapse when the promise of non-agricultural conversion becomes so great that landowners relax while waiting to "cash out".

E) Much of the "prime" agricultural land is not within Agricultural Preserves --

The Williamson Act, also called the California Land Conservation Act, of 1965, was created to "preserve the maximum amount of a limited supply of prime agricultural land." It provided for qualified property to be incorporated into Agricultural Preserves through contracts with the County, a designation providing lower property taxes along with development restrictions. Only about 50% of the eligible "prime" farmland in the County has been designated as Ag Preserve (as defined in the zoning ordinance for Type I). The Williamson Act incentives do not seem to be strong enough for the owners of prime ag land with high value crops, especially after Prop. 13, to include their valuable property in Ag Preserve classification. This land also receives the greatest pressure for development.

F) Some parcels are too small for viable commercial agriculture --

Small parcel size is especially a problem when the owner needs to make a living in agriculture. If parcel size becomes too small for economically producing a certain commodity, the land will either be converted to non-agricultural uses or not be farmed for optimum production. Scattered

houses in agricultural areas can impair daily agricultural operations, as described in D above. However, the minimum farm-unit size to keep agriculture land in production depends upon the value of the commodity per acre and the economic returns expected by the owner. Parcels sold for speculation also drive the price up beyond their value for farmland, making their continuance in agriculture even less likely.

G) Agricultural practices affect the environment --

Improper management of agricultural land can impair the productivity of the soil as well as harm other natural resources. Overgrazing continues to be a serious problem in the County, according to soil conservation experts. Soil erosion and agricultural run-off cause water pollution, which in turn can degrade fish and wildlife habitat and water supplies. Construction of access roads on farms and ranches can also stimulate erosion and landslides. On the other hand, good management can improve range, soils, and water.

H) Lack of reliable and inexpensive water supplies for projected agricultural uses --

New and projected uses of water for agriculture may alter the reliability and cost-effectiveness of water supplies in some areas of the County. For instance, the change from smudge pots to sprinklers for frost protection has increased water demand at certain times of the year. The level of groundwater has declined in some areas due to a combination of factors, causing problems with well depths and increased pumping costs. Agricultural water users cannot afford to pay the same price per unit of water that domestic and industrial water users can. (For more discussion, see the section on "Water Resources".)

I) Poorly drained valley soils impede production of certain crops --

Poorly drained soils are difficult to crop and prevent the production of more valuable crops. Examples of areas in the County with such soils are Round Valley and Little Lake Valley. Possible solutions include drainage improvements and alternative, specially adapted crops.

J) Predation of livestock has been increasing --

Losses of livestock, most particularly sheep, continue to be caused by predation. Predators are mainly dogs and coyotes. Dogs are directly related to human habitation and the denser the human population, the higher the probability of dogs preying on livestock. Uncontrolled dogs are particularly a problem in rural areas, where many dog owners without livestock are unaware of the damage their roaming dogs can do. An Environmental Impact Report on the County's Predator Control Program was completed in 1975, which analyzed the problems associated with predator control and possible alternative solutions. A dog control ordinance was recently adopted by the County and dog control warning signs are being posted.

K) Agricultural lands provide open space and a rural quality of life --

Agricultural lands also have value as open space and can increase the value of nearby homesites for their scenic qualities. While ag land



is perceived by some people as permanent open space, some of these lands are actually held for speculation, retirement income, inheritance tax dodge, or other non-permanent uses. The Open Space District Ordinance originally adopted in 1956 and amended in 1966 has not been used as a tool to perpetuate the "rural quality of life" in Mendocino County to any extent.

L) Agricultural land provides net tax benefits --

Generally, the tax returns to the community from farms are greater than the public service and facility outlays they require. Thus, in terms of tax returns versus public costs, the farms are producers and not consumers. After Prop. 13, new residential development tends to be much more of a consumer than a producer of taxes, particularly when scattered.

M) Livestock operations on rangeland require large acreage minimums to survive --

Recent studies of the economic viability of livestock operations on rangeland have produced some revealing information about minimum parcel sizes needed to produce a certain annual income or return to the land. The following three tables summarize the results:

MINIMUM ACREAGES

I. Mendocino Coast (U.C. Cooperative Extension Service, Oct. 1979)

<u>Cow/Calf Operation</u>	<u>Return to Land</u>			
	<u>0%</u>	<u>1%</u>	<u>2%</u>	<u>3%</u>
# of Acres to Support \$18,000 Annual Income	700	840	1,120	1,470

II. Mendocino Coast (Richard Strong, Local Coastal Plan, Jan. 1980)

Minimum Acreage for Various Annual Incomes

<u>Cattle</u>	<u>\$10,000</u>	<u>\$15,000</u>	<u>\$20,000</u>
1979 prices	428 Ac	641 Ac	856 Ac
1969, 1972, & 1973 ave.	920	1,380	1,839
<u>Sheep</u>			
1979	109	163	218
1969-1977 ave.	167	251	335

III. Sonoma County (McDonald and Grefe, Mar. 1978)

<u>Cow/Calf Operation</u>	<u>0%</u>	<u>Return to Land</u>	
		<u>2%</u>	<u>3%</u>
# of Acres to Support \$12,000 farm operation income	1560 Ac	Cannot be Achieved	
<u>Sheep</u>			
Coastal Ranch	865 Ac	2,600 Ac	Cannot be Achieved
Mendocino Highlands Ranch		Cannot be Achieved	

No studies of the interior Mendocino County rangeland (with shorter growing season and harsher climate) have yet been done, so the acreages indicated by these three studies would seem to reflect the best situation within the county. Parcel size for dairying is less than for beef cattle because more feed is imported or grown on the farm. In addition, most livestock operations rely on leasing some land for grazing. Many ranchers have to supplement their ranch earnings with off-farm income in order to remain in production.

N) "Green Line" designations used elsewhere to protect ag lands --

Several agricultural areas in the state have designated a line on their land use planning maps to indicate the outer edge of urban development during their planning period. The City of Chico called this line a "Green Line" and adopted compatible zoning toward its goal of protecting agriculture. Both Napa County and City adopted a "Residential Urban Limit" line in their General Plans. Within this line, they planned for sufficient land area to accommodate the projected population and services. This concept encourages the development of pockets of land within the line while preventing leap frog growth into productive or potentially productive agricultural land beyond this boundary. A buffer of small-sized intensive farming operations could provide further protection between agricultural land and incompatible uses.

Agriculture  
Goals and Policies

GOAL #1

The County shall protect and maintain prime agricultural land and prime range land.

Policies

- 1a. The Board of Supervisors has determined that agriculture is a major industry of the County and that for the protection of agriculture and in order to prevent further encroachment upon it by incompatible uses of property and for the general welfare of the County as a whole,

there are hereby created classifications within which agriculture shall be encouraged to the exclusion of such uses of land as may be in conflict therewith. Therefore, the provisions of this general plan shall be liberally interpreted, insofar as they apply to agricultural pursuits and services, and shall not be deemed or construed to permit interference with any normal accessory use conducted in conjunction therewith. It is the intention of this general plan to provide maximum protection to existing and future agricultural enterprises, and to encourage the highest and best use of the lands so classified for agricultural purposes, including the necessary residential, recreational, educational, public utilities and other similar uses necessary and incidental thereto.

- 1b. Require parcel sizes created by new land divisions to be sufficient to maintain the agricultural intent of the land use classifications and to meet economic standards for Type I and Type II Agricultural Preserve as set forth in county ordinances.
- 1c. Prohibit new non-agricultural uses in agricultural areas which can interfere with any normal agricultural operations or its necessary accessory uses.
- I 1d. Provide for zoning that will permit establishment of small-sized, specialized, intensive farming operations that can take advantage of regional and local markets.
- I 1e. Identify land uses which are supplemental, accessory, and substantially compatible to ag operations in the Zoning Ordinance.
- I 1f. Continue the use and expansion of Agricultural Preserve for both prime ag land and range land. The Williamson Act program shall be reviewed and recommendations made for improvements and incentives needed to protect more prime ag land, including the possibility of allowing for smaller parcels.
- 1g. Support policies and programs that provide tax and economic incentives which will enhance competitive capabilities of farm and ranches and thereby insure the long-term retention of agricultural lands. Preserve property tax status of agricultural lands which is provided by statutes such as Proposition 13 and the Williamson Act.
- 1h. New nonagricultural classifications shall not be assigned to prime agricultural lands or prime rangelands (as defined by county ordinances) unless all of the following findings, supported by substantial evidence in the record, can be made by the decision-making body:
  - i. The subject parcel or parcels have already been rendered substantially unusable for agricultural purposes by virtue of encroaching adjacent non-agricultural uses. Nonagricultural uses of the subject parcel shall only be allowed as an extension of adjacent non-agricultural uses.
  - ii. Use of the site will not impair agricultural activities in the project area.



- iii. There is no land which is zoned commercial, residential or industrial where the project can be reasonably located.
- iv. The site location is in conformance with all applicable elements of the County General Plan, and the decision is in the public interest.
- li. Review periodically these agricultural policies to ensure that they are leading toward the adopted agricultural goals.

## GOAL #2

The County shall seek to minimize the conflicts between agricultural operations and other land and resource uses.

### Policies

- 2a. Limit residential uses and subdivisions adjacent to Type I Ag Preserve land to a low density standard. Parcels contiguous to Type I Ag Preserve classified RR shall have a 5-acre minimum, except a higher density may be allowed to recognize the average density of the existing parcel sizes, or if the new parcels are zoned for Clustering (:C) or Planned Development (:PD).
- 2b. Limit residential uses and subdivisions adjacent to Type II Ag Preserve to a low density standard (RR and RMR). Parcels contiguous to Type II Ag Preserve and classified RR shall have a 10-acre minimum, except a higher density may be allowed to recognize the average density of the existing parcel sizes, or if the new parcels are zoned Planned Development (:PD) or Clustering (:C).
- 2c. Support Best Management Practices for agricultural lands through:
  - i. Technical assistance and information for agricultural operators from Soil Conservation Service, Mendocino Resource Conservation District, and U.C. Agricultural Extension staff.
  - ii. Continue support of funding of the above agricultural services.
- 2d. Support stronger enforcement of County ordinances designed to limit cost and damage to farm operations from trespass, vandalism, theft and contamination from abandoned or uncared for orchards and vineyards.

## GOAL #3

The County shall constantly strive to create and promote those policies and conditions that will enable Mendocino County ranchers, farmers, and homesteaders to maintain economically sound and profitable operations.

### Policies

- 3a. Support agricultural promotion and marketing programs and co-ops for the agricultural products from the County's ranches, farms and homesteads.
- 3b. Determine the quantity of water necessary to maintain and enhance agricultural uses and take positive measures to meet this need. The Board

of Supervisors shall make all efforts to secure all available water from Lake Mendocino for use within the Russian River Basin of the County.

- 3c. Encourage water conservation in irrigation practices and promote research to develop practical measures such as the use of wastewater for irrigation.
- 3d. Support and promote the proper management of agricultural land. This will include research to determine better use of poorly drained agricultural areas.
- 3e. Implement an effective predator control program to reduce predation levels on livestock. Measures to prevent or mitigate dog predation shall be applied, where appropriate, to rural development proposals.
- 3f. Seek methods of promoting, and allowing for, the use of local agricultural products, such as meat and milk, by the local market without the necessity of transporting these products to distant points for inspection. Encourage local truck gardening for local markets.
- 3g. Support a vegetation management program to improve the availability and quality of rangeland for livestock and wildlife, reduce the hazard of disastrous wildfires, and increase water quantity and quality.
- 3h. Seek to minimize the increasing cost impact of government regulations.
- 3i. Support and encourage funding at all levels of government and in the private sector for basic agricultural research to develop pest control measures, agricultural chemicals, new methods and technology, etc. towards the end of optimizing productivity and minimizing environmental damage.
- 3j. Continued use of approved bactericides, nematocides, fungicides, herbicides, and pesticides by County farmers and ranchers shall be in accordance with local, state and federal regulations.
- 3k. Continuous review should be made of proposed changes to Air Quality standards which might place severe limitations on present agricultural open burning practices for range and forest lands.

#### GOAL #4

The County shall maintain prime range land in units sufficient to provide for an economic management base.

#### Policies

- 4a. For major holdings (640 acres or larger), discourage subdivision, but permit clustering to the extent allowed by the land use density maps.

#### MAPS

See County-wide and CAC Area Maps depicting agricultural soils, land capability and Agricultural Preserve zoning.

### 3. AIR QUALITY

#### Issues

1. Protection of clean air throughout county.
2. Impact of increased development upon air quality.
3. Excessive concentrations of particulate matter which exceed federal air quality standards in certain parts of the county.
4. Improvement of air quality in recent years due to stricter controls and innovative technology.
5. Potential air pollution from energy production: sulfur from geothermal steam and hydrocarbons from possible oil and gas facilities both on and off-shore.
6. Adequacy of air quality monitoring.

#### Findings

- A) Air quality is generally excellent, with some problem spots --

The clean air enjoyed by the people of Mendocino County is one of the highest valued aspects of the rural quality of life. Most of the county's air is of above average quality, but a few areas have occasional problems. During periods of strong atmospheric inversions and subsequent air stagnation, the particulate matter created by industrial and agricultural sources cannot disperse. The Fort Bragg area has particulate concentrations sometimes exceeding federal air quality standards, while the Ukiah valley has infrequent excesses of particulates. In the past, the Willits valley area had problems before tepee burners were eliminated.

- B) Air quality has improved overall --

Historical photos of the Ukiah valley reveal that hazy skies on sunny days are not a new phenomenon for the area. Agricultural activities, particularly the use of oil buckets, tire burning and smudge pots for frost protection of vineyards and orchards contributed pollutants for many years. A high percentage of particulates were also caused by lumber industry activities, such as forest slash burning, mill waste incineration in tepee burners and wood-fired steam generators. Both industrial and agricultural sources, however, have been rapidly eliminated or controlled through strict air pollution control regulations. Smokey smudge pots were replaced by smokeless pots or sprinkler systems, tepee burners are all but phased out, and open burning dumps were eliminated, for examples. County particulate matter emissions have been reduced from 23.8 tons per day in 1970 to 10.6 tons per day in 1976, to 2.1 tons per day in 1980.

- C) State and federal regulations govern quality --

Mendocino County lies within the North Coast Air Basin as established



by the California Air Resources Board (ARB). The ARB is in charge of enforcing and maintaining the State and Federal Air Quality Standards, which are not necessarily set at the same levels. While the federal standards may be exceeded once each year, the state standards are set as goals which are "not to be equaled or exceeded". The North Coast Air Basin has been designated as a noncritical air basin in California. Specific areas of non-attainment can become designated by the County Air Pollution Control District (APCD). Only one area in Fort Bragg is presently determined to be "non-attainment" for meeting air quality standards for particulate matter. Other areas of the county are considered for the "Prevention of Significant Deterioration" (PSD) of that area's air quality status. The County District was officially formed in 1971 to solve local problems of smudge pots, open burning and tepee burner smoke. It later assisted in helping to carry out the state's air quality program. Permits are required from the county, state, and federal agencies for any major source of emissions prior to construction, modification, and operation.

D) Monitoring of air pollutants provides an early warning system --

To detect an air pollution problem before standards become violated requires an accurate and continuous monitoring program. Data on particulates has been collected for ten years in various areas of the county, including baseline data for the more remote and pristine sections. Continuous monitoring of ozone, which is an indicator of hydrocarbons from autos and industry, began in 1978 in the county. Monitoring carbon monoxide began in 1979 and is another important indicator of urban-related pollutants. Meteorological data, such as wind speed and direction and velocity and air temperatures, are also being collected in conjunction with pollutant monitoring by the County Air Pollution Control District.

E) Future development could impair county's air quality --

Although ozone measurements and other indicators show that pollution from cars is not a problem in the county, the potential for automobile-related smog still exists, particularly in the inversion prone valleys. The circulation systems for existing and future development and the location and type of land uses will most directly affect future air quality. Another source of particulate matter which may increase is the excessive smoke caused by inefficient wood burning in fireplaces and stoves used for residential and commercial heating. As a substitute for high priced fossil fuels, wood fuel will probably be used much more for heating in the future. In addition, geothermal power development could add some sulfides to Mendocino's air and off-shore oil production facilities could contribute hydrocarbons.

F) Air pollution can be harmful to health and agriculture --

Excessive concentrations of air pollutants can be detrimental to human health. Particulates, for instance, bother people with asthma and lung problems. Although there are limitations of knowledge about the specific harm of particulates, air quality standards have been adopted for the



protection of public health because particulates are of such great and immediate concern to the public. Crops can also be harmed by pollutants. Deposits of particulates from the old tepee burners adversely affected adjacent crops in certain areas. In addition, new evidence from research reveals that at least some crops may be more vulnerable than previously thought.

G) Industry uses innovative technology to meet standards --

Large industrial wood processing plants are converting their boilers from natural gas or fuel oil to less expensive hogged wood waste fuel and are having to use the best available particulate control systems for these new boilers. One plant recently built a new waste-fired boiler which reportedly produces no smoke, replacing the old one which required occasional "blow out" of oil carbon build-up. Since the county is a "non-attainment area" for particulates, no new major source of particulates can operate in the county before a reduction of particulate emissions from existing sources is attained. The best available control technology is also required of such emission sources.

Air Quality  
Goals and Policies

GOAL

The county shall achieve and maintain high levels of air quality to protect public health and agriculture and to provide scenic enjoyment.

Policies

- a. A continuous monitoring program shall be maintained by the County Air Pollution Control District of ozone, carbon monoxide and particulates in areas that indicate need for an early warning system.
- b. Meteorological data shall continue to be gathered on a county-wide basis and be made publicly available.
- c. No public or private project shall be allowed that could generate emissions greater than prescribed standards.
- d. Support the maintenance of current state and federal air quality standards.
- e. Encourage industry to continue its efforts to develop innovative methods of air pollution-free operation.
- f. Recommend that air monitoring programs existing in the Geysers Known Geothermal Resource Area be expanded to include the Mendocino County portion of that region.
- g. Support the continued use of prescribed burning on range and forest lands as outlined by regulation and statute.



## 4. ENERGY

### Issues

1. Increasing costs of energy and uncertainty of future energy supplies, particularly non-renewable energy sources.
2. Potential of alternative renewable sources of energy within Mendocino County, such as solar, wind, wood, wave and hydroelectric power.
3. Impacts of exploration and production of geothermal energy and its potential contribution to long-term energy needs.
4. Opportunities for energy conservation through improved land use and transportation planning and structural measures.
5. Impacts of proposed on-shore and off-shore gas and oil exploration, production and transportation.
6. Effect of energy availability on Mendocino County's growth potential and local economy.
7. Viability of non-polluting, renewable energy sources to provide "Energy Equivalency" for offshore oil.

### Findings

- A) Energy use and costs continue to grow while supplies become more uncertain --

The decade of the 1970's brought increased awareness of the energy problem of the U.S. and the world and the 1980's promise to strongly challenge our ability to adapt to a different energy future. Energy use grew rapidly in California over the past ten years, despite increasing prices and warnings of shortages. According to the California Energy Commission, the state consumes about 10% of the energy used in the U.S., imports over half of its supplies from out-of-state, and faces major medium to long-term supply problems. Of the energy sources of petroleum, natural gas, and electricity, about 41% of the total use is for transportation, 42% for residential, and 17% for non-residential.

Prices are escalating rapidly as we all are aware. Gasoline prices doubled during 1979. The marginal cost of P.G.&E.'s oil-fired generation to Mendocino County residents is currently over 4 cents per kilowatt-hour (KWh). It is increasing at a 9% real escalation rate over the next five years and at 2 to 4% real escalation after 1985, according to the Energy Commission's most likely forecast adopted in its 1979 Biennial Report. Oil-fired electricity can be expected to cost 6.3 cents per KWh by 1985, 7.3 cents by 1990, and 8.7 cents by 2000 even before adjusting for inflation.

The energy use patterns of the county have not been completely calculated, but the trends probably parallel those of the State. Current electrical demands in the county are about 112 megawatts annually, P.G.&E. figures reveal. Winter demand is increasing 4.7% per year

while summer demand is growing at a 7% rate, probably reflecting an increased use of air conditioners.

- B) Effect on the county of energy shortages and high prices is potentially great --

Severe economic dislocations could occur in Mendocino County as the result of energy shortages and high energy prices. The tourism industry, so dependent on available transportation systems, could find itself in a serious decline if adequate gasoline is not available or public transportation cannot compensate. High transportation costs will directly affect both the importing and exporting of goods and services. Both the timber and agricultural industries are dependent upon gasoline and diesel fuel both for production and transportation of their products. Agriculture also depends on fertilizers, which are often oil products. On the positive side, the new energy economics could possibly lead to the increased viability of local industries serving local markets.

- C) County has a wide variety of existing and potential energy sources --

Mendocino County is fortunate to have numerous energy sources within its boundaries, some of which are already being used and others which are still being explored. Hydro-electric power is generated by the Potter Valley Project of P.G.&E. and provides about 8% of the county's electrical requirements, according to the company's figures. The City of Ukiah is investigating the development of hydroelectric power from Coyote Dam - Lake Mendocino. Local wood supplies, both hardwood and soft wood, are being used in wood stoves for some residential heating while wood residues from logging and milling are now contributing to industrial power and steam generation. Geothermal resources are known to exist in neighboring counties. Solar and wind power are just beginning to be applied for small scale residential use although the potential is very great in many areas of the county. Wind speed data is being collected in the county by the local Air Pollution Control District and P.G.&E.. P.G.&E. owns a site at Point Arena which is a possible location for an experimental wind-powered generation machine, but could be used for other types of generating facilities (i.e. solar, tidal). Alcohol fuel could be produced from wood residues, manure, and plant residue. Non-renewable energy sources also are found in or near the county: oil and gas (both on-shore and off-shore), oil shale, and coal. Development of the oil and gas resources is now in the planning stages. While this listing of local energy sources is diverse, each source has social, economic and environmental advantages and disadvantages which will need to be addressed before its potential can be realized. Air quality impacts are of particular concern.

- D) Energy conservation allows us to keep options open for sources of future energy --

In the past, conservation and energy efficiency were undervalued due to cheap and abundant energy sources. The reverse situation today makes conservation the first place to begin and is a "viable and less-costly alternative to traditional energy supplies", says the California Energy Commission. Equivalent energy from improved efficiencies



and the elimination of waste can be achieved at a lower cost than the construction of additional facilities. So conservation saves both energy and money. By slowing the growth in energy demand through energy conservation measures, the need is reduced for additional sources of fossil fuels and new electricity generating facilities. A significant savings is possible through conservation, according to the U.S. Council on Environmental Quality. The U.S. economy could operate on 30-40% less energy through increases in the productive efficiency of energy possible with today's technology. New jobs may also result from the development and application of conservation measures. Examples of methods to improve energy efficiency include: increased insulation in new and existing buildings (adequate attic insulation can cut fuel use as much as 25%); less wasteful personal habits; use of car pooling, public transit, bicycles and other more efficient transportation; and the recycling of wastes.

E) Solar energy is becoming economically more attractive --

Energy from the sun is a renewable resource which is clean, safe and environmentally sound. It is also becoming increasingly cost-effective. Recent studies show that solar houses with passive designs can have energy savings of 25-75% in heating and cooling cost while active solar systems have the potential to provide at least 70-75% of each residence's water heating requirements and at least 50% of heating and cooling needs. Current state and federal tax credits for solar installations are valuable incentives which are making solar design economically more attractive.

The national goal is to supply 20% of our energy from solar power by the year 2000. On the local level, the city of Ukiah is working with the California Energy Commission to develop a "Municipal Solar Utility" plan which will integrate conservation and other alternative energy programs in conjunction with the Northern California Power Authority. Other local governments in the state have already become actively involved in promoting solar energy through a variety of measures: solar design of government buildings, solar ordinances and codes, and public education, for example. As the League of California Cities' Solar Handbook states, "the area of solar use provides a unique opportunity to exercise home rule in its most basic sense".

The county has additional authority to guarantee a solar system owner's right to sunlight through two state laws enacted in 1978: the Solar Rights Act and the Solar Shade Control Act. The Solar Rights Act requires that local planning and building ordinances should not have the effect of prohibiting or unreasonably restricting the use of solar energy systems; that tentative subdivision maps provide, to the extent feasible, for future natural heating or cooling opportunities in the subdivision; and it allows local governments to adopt an ordinance requiring the dedication of easements for solar access as a condition of subdivision map approval.

F) Development of oil and gas opposed by local interests --

Oil and gas reserves are possibly located along the county's coast and offshore on the Outer Continental Shelf (OCS). Oil spills and onshore

related offshore oil and gas development pose direct threats to the environment, air quality, visual resources, fresh water quality and quantity, fishing and tourism as well as the general economy of the coast. The Mendocino County Technical Advisory Task Force on the Outer Continental Shelf has made these findings, supported by Board of Supervisors' resolutions. In addition, during 1981, State Coastal Commission, Governor Brown and California Congressional Representatives oppose offshore oil and gas development in this County, and the other north coast counties.

G) Geothermal resources of the county may soon be developed --

Geothermal exploration is continuing in the southeast corner of Mendocino County, which is included within the Geysers-Calistoga Known Geothermal Resource Area (KGRA). To date, no development of commercial geothermal steam has occurred in the county although the neighboring counties of Lake and Sonoma have plants in production. As of 1980, P.G.&E. has 14 units on line in the KGRA with 800 megawatts of electrical generating capacity. Part of this electricity is used locally through the integrated electrical grid system. Besides P.G.&E., the No. Calif. Power Assn., the Calif. Dept. of Water Resources, and the Sacramento MUD are each planning to construct one or more generating facilities at the Geysers. Thermal springs also occur in parts of the county, but have not yet been proven to be of commercial value. Various environmental problems are associated with geothermal development, probably the most serious and controversial being air pollution.

H) Opportunities for energy from biomass exist in the county --

Biomass sources include agricultural wastes, timber residues, urban solid wastes, and aquatic plants such as kelp. Wood is already being used considerably in the county for residential heating. The lumber manufacturing industry is pursuing the opportunity to be as self-sufficient as possible by fueling its boilers with wood wastes and developing the co-generation of electricity. Excess electricity generated is sold to P.G.&E. While the possibility of silvicultural biomass farms has been studied, they do not yet seem to be economically feasible. Since the demand for lumber is apparently greater than the supply in California, "it seems extremely unlikely that commercial timber will actually be devoted to fuel production", says the Energy Commission. An exception may be the hardwoods, which are generally unwanted today as commercial timber and are in abundance. The major drawback to wood fuel is the particulate matter resulting from burning. Smoke from woodburning stoves could become a significant source of air pollution in the county.

I) Land use and transportation planning can directly affect energy use --

How we locate land uses and design the transportation services they need can greatly influence energy consumption. For instance, compact residential development with higher densities and close to employment and commercial areas would demand less energy for transportation than sprawled patterns of development. Providing such densities and mix of

land uses may reduce the length and number of trips for personal automobile travel as well as school bus service. Promotion of the use of alternatives to the automobile, such as public transit, bicycle, and pedestrian facilities, will also decrease the community's level of energy use.

J) A comprehensive approach to local energy planning is needed --

While an Energy Element is not required in the General Plan, the County's leaders and citizens believe the energy problem deserves to be addressed in a comprehensive plan. Citizens' groups and the City of Ukiah have expressed considerable interest and have made progress in identifying local energy needs and potential solutions. A focused county-wide effort is now needed to develop an energy plan or element which will be both thorough and workable. Until this plan is completed and adopted, policies are needed in the General Plan to address the energy impacts of land use and transportation planning decisions.

### ENERGY GOALS AND POLICIES

#### Goal Number 1

The County shall actively support energy conservation and the use of local renewable energy sources which are environmentally sound.

#### Policies

- 1a. The County shall create a county-wide task force to develop a comprehensive energy policy or element.
- 1b. Support the use of solar space and water heating and energy conservation measures, for public buildings, schools and commercial buildings.
- 1c. Conduct an energy audit of existing county-owned buildings to determine potential for energy conservation measures.
- 1d. Revise County building and planning ordinances and standards as needed to facilitate the implementation of solar use and energy conservation.
- 1e. Support waste recycling, cogeneration, and the use of burnable trash as an energy source.
- 1f. Request that the Federal Government establish all or part of the Outer Continental Shelf as a petroleum reserve to be used only in time of national emergency.
- 1g. New onshore development directly related to offshore oil and gas development shall not be permitted within this County.
- 1h. Require all new County owned buildings to be designed for solar energy use if such design is shown to be cost effective.



## GOAL #2

The County shall make energy efficiency a major consideration in its land use and transportation planning decisions.

### Policies

- 2a. Sites for new public facilities serving large numbers of people shall be close to or within population centers to minimize automobile use.
  - 2b. Encourage, support and promote bicycle and pedestrian travel by including in the planning process the requirement for safe, adequate shoulders on county roads and bicycle and pedestrian paths in new residential subdivisions, public facilities, and other needed areas.
  - 2c. Locate high intensity land uses in areas which would minimize transportation energy consumption.
  - 2d. Encourage design alternatives for street widths and landscaping of streets and parking lots to reduce heat gain in urban areas.
  - 3e. Encourage and support Mendocino Transit Authority. Encourage development of private car pools, van pools and other transit systems.
  - 2f. Require new subdivisions, to the extent feasible, to provide for solar, wind or other alternative energy opportunities through the orientation and design of lots.
- I 2g. Revise the County Transportation Plan as necessary to include measures promoting energy efficient transportation systems and alternatives to the automobile.

## 5. FISHERIES

### Issues

1. Contribution of County's commercial and sport fisheries to local and state economy as well as to recreation and tourism.
2. Opportunity for fisheries enhancement through habitat improvement, stream clearance, improving stream flow, rearing ponds, and watershed restoration.
3. Decline in populations of steelhead and salmon in recent decades.
4. Reduction in streamflow due to dams and stream diversion, adversely affecting fish habitat and migration.
5. Potential damage to marine fisheries by outer continental shelf oil developments.
6. Potential of aquaculture, or "ocean ranching" and its effects upon the natural salmon population and the existing local fishing industry.
7. Increased poaching in remote sections of streams due to continual increase in number of access roads.
8. Uncertain future for commercial salmon trolling industry as the result of reduced salmon population, more restrictive fishing regulations, and increased fishing pressures.
9. Loss or degradation of spawning, feeding and nursery habitat from natural and man-made causes.

### Findings

- A) Commercial and sport fisheries provide a valuable contribution to local and state economies and production --

Noyo Harbor at Fort Bragg was first in the state in 1979 for the total value of its salmon catch (\$5,483,441), and second for total numbers, contributing about 20% of the state total catch. In 1976, the local salmon fishing and processing industry had total sales of \$4.9 million, which contributed \$15.6 million to the County's total sales through the local multiplier effect (see report by Pacific Fishery Management Council, 1978). Commercial landings for all species were 17,979,874 pounds for a value of \$5,736,683 in 1976 at Fort Bragg. Major commercial species, besides salmon, include rockfish, dove sole, dungeness crab, sablefish and albacore. The ports of Albion and Point Arena also added to production.

The Eel River ranks second in the state for coho (silver) salmon and steelhead production, third in chinook (king) salmon production, and second in the North Coast for sport fishing. The value of the sport and commercial anadromous fishery in the Eel River alone is estimated to be about \$12.3 million per year, according to a Humboldt County study.

(For additional facts and figures on Fisheries in Mendocino County, see "Fisheries - State of the Resource" available in the Planning Department office.)

B) Fish also have non-commercial value --

Fish have more value than just their commercial dollar value per pound. First of all, they have a natural, ecological value in their existence which is unrelated to human needs or uses. In addition, those species which are caught for sport have certain values not measured in the marketplace, such as the "willingness to pay" of the angler for the opportunity to fish. As the result of angler surveys, economists estimate that the net economic value of sport fishing is \$47 per angler-day for river fishing and \$113 per angler-day for ocean salmon fishing. These values do not, however, include the second and third level beneficiaries in support industries, such as equipment, boats, travel, and tourist accommodations.

Estimates have also been made of the commercial and sport value of each spawning anadromous fish: Chinook (king) salmon - \$178; coho (silver) salmon - \$160; and steelhead - \$69. (See "The Economic Value of Anadromous Fisheries for Six Rivers National Forest", by Dean Smith, Feb. 1978.)

C) Salmon and steelhead populations continue to decline --

Counts of steelhead trout in the Eel River at Van Arsdale Dam declined 86% over the past four decades, while King salmon declined 70% and silver salmon 64% in the South Fork Eel River. The summer steelhead of the Middle Fork Eel River represents 80% of the State's remaining population, but its numbers are still vulnerably low, ranging in number from 200 to 1500 over the last 13 years. As a result of the decreasing runs of summer Steelhead, the U.S. Forest Service has declared the Middle Fork Eel River summer steelhead a "sensitive" species, to be managed to prevent its becoming listed as rare or endangered. Most other streams in the County are not monitored accurately or regularly so only rough guesstimates are available. Observations in the smaller coastal streams indicate that present populations are smaller than those of the early 1960s, but do not provide a sound basis for estimating present populations.

D) Inadequate information exists on fish populations --

As mentioned above, most streams in the County are not monitored effectively to produce reliable estimates of spawning populations of anadromous fish. The last attempt to develop estimates for the coastal streams was in the early 1960s for the California Department of Fish and Game's Fish and Wildlife Plan, but no data was collected for this effort. Studies for the 1980 update of this Plan will not involve data collection for these streams either. The large manpower requirements of such needed surveys are given as the primary reason for inadequate coverage. Without baseline data on spawning populations, however, it will be difficult to measure the success of fisheries enhancement efforts or the effects of habitat alterations.



E) Much of the salmon and steelhead habitat has been damaged --

The major floods of 1955 and 1964 caused substantial damage to fish habitat in some streams as the result of sedimentation, debris dams, streambank erosion, loss of streamside vegetation (for food and shade cover), and generally massive habitat alteration. Recovery has been slow, but is continuing. Man-made causes have certainly taken a major toll also. A study of the Garcia River in 1966 by the California Department of Fish and Game revealed that 84% of the fish habitat had been damaged (35% lightly, 14% moderately, and 35% severely) as the result of road-building, logging, overgrazing, and other poor land management practices. Similar problems can be found in many of our other watersheds. Restoration of damaged streams is very difficult, expensive and takes a long time. In spite of these problems, people and fish can and must be able to co-exist.

F) Reduced streamflows hinder fish survival --

Flows in many streams have been reduced by diversion to levels below the minimum necessary for fish survival or migration. Lower flows in the summer often mean critically high water temperatures for salmonid fish. Flow diversion is usually for water supply needs of residential, industrial and agricultural users. Current water rights law makes no provisions, however, for the water needs of fish and other aquatic life. An example of a major streamflow diversion is the transfer of an average of 184,000 acre-feet of water per year from the Eel River headwaters to the Russian River Basin. While beneficial to the development and fish life of the Russian River Basin, the diversion has been detrimental to fish in the Eel River. Extremely low flows during the summer months and between winter storms have contributed to the decline of anadromous fish populations, according to the Department of Fish and Game.

In November 1979, an interim agreement was entered into by Calif. Dept. of Fish and Game, P.G.&E., Mendocino County, and others to conduct a three year stream flow and fisheries study in the Eel River system. The purpose of the study is to identify flows and stream conditions necessary to support steelhead and salmon fisheries. Summer water releases were established to guarantee sufficient water to conduct the study.

G) Current fish protection regulations and enforcement are insufficient --

Poaching and the use of illegal fishing practices, such as gigging and fencing streams, are unfortunately a serious problem in some of the county's streams and can drastically deplete the fish populations.

The California Department of Fish and Game is the major regulatory agency for protecting fish resources. Certain sections of the Fish and Game Code, such as Sections 1601 and 1603 regulating stream bed alterations, are not strong enough or lack the flexibility to adequately do the job. The Department also has insufficient money and manpower to provide complete enforcement and when enforced, the violations are considered misdemeanors and the penalties are light. In too many cases, according to a former County warden, discovery of

violations does not come until it is too late to prevent total destruction of vital fish habitat. While other agencies such as the Regional Water Quality Control Board and California Department of Forestry also have some regulations to protect water quality, the county is in the best position to prevent and control many of the problems.

- H) Development of salmon ocean ranching has serious implications for local fishing industry and native fish populations --

Local commercial salmon fishermen are very concerned that the development of a fish farming facility on the North Coast could mean the end of natural wild salmon as well as the small independent fisherman. The artificially raised salmon, through genetic selection, may tend to return to the release facility at a size too small to be legally caught by commercial fisherman. In 1972, a proposal was made to install and operate a domesticated anadromous fish rearing facility at the mouth of Elk Creek, but it was turned down by the Planning Commission. Current state law does not allow new ocean ranching operations without special legislation. More study is needed of the impacts of domesticated fish rearing on the native fish populations and local fishing industry before definite conclusions can be drawn.

- I) Enhancement efforts have begun in County --

Several projects are currently underway in the County to enhance the County's fisheries. A Salmon/Steelhead Enhancement Program is being operated by the Center for Education and Manpower Resources (CEMR), with state and local funding, to identify and remove stream blockages and debris. The County Fish and Game Advisory Committee supports a steelhead rearing pond on Mill Creek, off the Russian River. Citizen groups on the coast have operated salmon rearing ponds for several years: on Ten Mile River and Big River (by Salmon Restoration Committee) and near Pt. Arena (by Save Our Salmon). Juvenile fish for these rearing ponds come from Calif. Dept. of Fish and Game hatcheries as surplus to state programs.

Recently a new salmon restoration program began with four lumber companies contributing \$5,000 each to build a portable egg-taking station, construct new fish-rearing ponds, and do more stream clearance work. While the off-shore fishery is also important to the local catch, the county can have much more direct influence on its inland fishery.

- J) Numerous opportunities are available to help County fisheries --

Strong protection of existing habitat by preventing stream damage is the first place to begin. The future of salmon and steelhead will be directly affected by land uses in each watershed. Habitat restoration of damaged streams is essential for the success of rearing programs to restore fish populations. Investing in habitat improvement would also help restore water quality, reduce soil erosion, enhance wildlife habitat and provide recreational opportunities. Besides the activities of current programs, restoration work could also include re-establishment of streamside vegetation, gravel rehabilitation, erosion control and reforestation.

## FISHERIES GOALS AND POLICIES

### Goal

Short-term: Double the number of salmon and steelhead presently within the County's streams.

Long-term: Restore and maintain in perpetuity salmon and steelhead populations to at least their former historic levels.

### Policies

- a. Protect, maintain, restore and enhance salmon and steelhead spawning and nursery habitat.
- b. Identify streams with spawning and nursery habitat and determine their current and potential fish population levels.
- c. Identify stream sections with important restoration needs and determine accessibility for restoration crews.
- d. Allow only compatible development along those important stream sections identified in #b above.
- e. Development projects with the potential to degrade or destroy stream habitat shall not be approved unless they fully comply with the goals, objectives, and policies of the Mendocino County Salmon and Steelhead Management Plan adopted by the Board of Supervisors in February, 1984.
- f. Modify the grading and surface mining ordinances to incorporate the necessary measures to protect and enhance fish habitat, including riparian vegetation protection and restoration, and erosion and sediment control measures.
- g. The County shall seek private and public funding for fish and fish habitat restoration programs such as the CEMR Salmon/Steelhead Enhancement Program, the County Fish and Game Advisory Committee and community salmon and steelhead rearing and other support efforts.
- h. Support the restoration of spawning and nursery habitat in the Eel River.
- i. Encourage streamside property owners and appropriate public agencies to participate in salmon and steelhead enhancement projects for coastal rivers and streams of Mendocino County.
- j. Encourage all public land management agencies to preserve, maintain and enhance the fish habitat within their jurisdiction.
- k. Encourage adequate funding and manpower for the California Department of Fish and Game to improve its enforcement of the Fish and Game Code and to increase its monitoring and research efforts on fishery and wildlife resources within the County.



- l. Support a study of the impacts of dragboat fishing and the implications of allowing development of salmon ocean ranching on the North Coast, including the impact of native fish populations, traditional harvest methods, sport fishing, and independent fishermen and support industries.
- m. Promote the collection of baseline data to determine present populations of steelhead and salmon in the county's streams.
- n. Support instream flows adequate to maintain and protect historic fishery values within all county streams.
- o. Request of the state legislature that 5% or more of state fishing license fees be set aside for the rearing, planting and restocking of native fish in county streams.
- p. The local fisheries are a long-term value to the county economically and as such, must take priority over the short-term benefits of oil extraction.
- q. Endorse and support implementation of the Summer Steelhead Management Plan prepared by the California Department of Fish and Game and Mendocino National Forest for the Middle Fork Eel River.
- r. Support the continued use of prescribed burning to improve the quality of the county's watersheds for fish and wildlife habitat. Encourage the use of local labor to help reduce the unemployment problem.

#### MAPS

See County-wide and CAC Area "Biological Resources Map" depicting anadromous fish habitat in the county's streams.

## 6. FORESTRY

### Issues

1. Loss of productive timberland to other uses:
  - a. Irreversible loss of timber land to residential/urban and encroachment.
  - b. Conversion of timberland to rangeland and other nonurban uses.
  - c. Parcelization of commercial timber land into inefficient sizes for production.
  - d. Public acquisition of timberland for park or preservation purposes.
2. Impact of forest practices on other uses and resources:
  - a. Conflicts between timber harvesting areas and adjacent land uses (e.g., rural-residential, water supply, noise, dust, traffic).
  - b. Impact of timber harvesting activities on water quality and fisheries.
  - c. Adequacy of State Forest Practices Act to ensure erosion control, protection of other natural resources, and consideration of cumulative impacts.
3. Factors affecting optimum production:
  - a. Effectiveness of Timber Preserve Zone (TPZ) designation and its tax benefits to maintain and encourage the responsible management of forest resources on private timberlands.
  - b. Impact on timber resources caused by unmanaged timberland.
  - c. Increase of fire hazard with higher density population in forested areas.
  - d. Contribution of private non-industrial forest landowner to timber supply.
  - e. Dominance of hardwood types on much of the commercial forest area.
  - f. Effectiveness of State Forest Practice Act to ensure responsible forest management, sustained yield harvesting, and adequate reforestation.

### Findings

- A) Timber production provides a significant contribution to county's economy and state and national production --

In 1980 the total value of timber production in the county was \$73,585,000 in stumpage value, or about \$108.8 million in "log at mill" value. Demand for lumber dropped significantly in 1979 and 1980 due to increased interest rates and the resulting decline in construction. Sales of goods and services by the wood and lumber industry were about 37% of the county's total in 1976. Mendocino County is second only to Humboldt County in timber production in the State and contributed 13% of California's total production in 1977. California ranks second in the nation in lumber production.

(For additional facts and figures on Forestry in the County, see "Forestry-State of the Resource" available in the Planning Department Office.)

B) County has special timber growing capabilities --

Mendocino County contains 1,304,000 acres of unreserved commercial forest land, or 58% of the total county area. The special combination of climate and soils provides ideal conditions for redwood forests, which extend 10 to 20 miles inland from the coast and account for 55% of the county's sawtimber growth. Douglas-fir growth accounts for 29% of the total. Production per acre is generally superior to other timbered areas in the State.

C) Timberland conversions to other uses is decreasing; species conversion still a problem --

Between 1948 and 1968, about 2 percent of the commercial forest area was lost to non-forest uses (Oswald, 1972). Six conversions with a total of 4,155 acres were recorded with the California Department of Forestry for the years 1969 through 1978 for the county.

Almost half of the commercial forest area is stocked with low value hardwoods and scattered conifers, a condition resulting from wild fires, logging and unsuccessful or abandoned attempts to convert timberland to grazing land.

D) Parcelization of timber lands can reduce timber yields and increase conflicts --

With the fragmentation of larger ownerships into small parcels, production of timber will probably decrease on these sites. Smaller forest landowners have diverse reasons for owning the land, many of which are unrelated to timber production. An increase in residences and population density in forested areas near logging sites has led to conflicts over the impacts of logging activities (e.g., traffic, noise, water supply, access). The disadvantages of smaller sizes include timber access problems, increased costs, reduced revenues, and increased risks for the landowner. In recent years, timberland parcels are being consolidated by corporate ownerships in the county.

E) Lack of current inventory of county's timber resources --

The most recent comprehensive forest inventory for Mendocino County was conducted in 1967 by U.S. Forest Service research scientists. Its results no longer reflect current conditions for much of the county's forested area. Until an updated inventory is completed, it is difficult to accurately determine if current timber harvest levels are compatible with sustained yield production.

F) State Forest Practice Act regulates local timber harvesting activities --

Logging on non-federal lands is regulated by the California Department of Forestry (CDF) according to the Forest Practice Act of 1973. Regulations require forest practices that will reduce the impact of timber harvesting operations on the site and on streams.



In 1978, 565 Timber Harvest Plans were approved in Mendocino County under the Forest Practice Act, or 18% of the state total. A total of 127 violations (2%) of the Forest Practice Rules out of a total 6,602 inspections were recorded for the county in 1978 by CDF, with the most common violations pertaining to waterbreaks, fire protection and stream protection measures. Violations of rules and regulations are considered misdemeanors, subject to a maximum fine of \$500.00 and/or imprisonment. To meet the requirements of Section 208 of the Federal Clean Water Act, the State Board of Forestry proposes a continuing planning process to correct deficiencies and make improvements in the current forest practice regulations.

G) Much of County's commercial forest land is in Timber Preserve Zones --

The Forest Taxation Reform Act of 1976 (the Yield Tax Law) significantly changed the way timber and timberland are taxed in order to encourage better forest management. Land which is devoted to and used for growing and harvesting timber can be placed for a minimum 10-year period in a Timberland Preserve Zone (TPZ), which may be used only for production of forest products and compatible uses. In turn, the taxes levied against TPZ land are to be based on the allowed uses only and not on the standing timber. Such timber is taxed only at the time of harvest. As of 1979, 884,516 acres or 39% of the county were classified as TPZ lands. This amount represents about 3/4 of the non-federal commercial forest land.

H) Small forest ownerships contain the most potential for future timber growth --

The farmer and miscellaneous private ownership group owns 590,000 acres or 45% of Mendocino's commercial forest land and 34% of its sawtimber volume. Since this land is stocked predominantly with young stands and hardwood types, and represents almost half the land base, it could be very important to the future of timber production in the county.

I) Some productive forest land is unavailable for commercial use --

About 6,000 acres (or 0.5%) of the county's public "commercial" forests are in a "reserved" status, unavailable for timber production. A small amount of public timber lands managed by the U.S. Forest Service and the Bureau of Land Management in the county are being studied for possible designation as Wilderness.

Forestry  
Goals and Policies

GOAL #1:

The County shall protect and maintain commercial timberland.

Policies

- 1a. Require parcel sizes on subdivisions of commercial timberland to be sufficient to provide for productive economic timber use and practical management. Parcel splits of TPZ lands shall also require provision for adequate timber access routes in conformance with a timber management plan.

- I 1b. Continue the use and expansion of Timber Preserve Zones for commercial timberland.
- 1c. Encourage cooperative management of small parcels that have commercial timber capabilities, where feasible.
- 1d. Prohibit development of prime timberland (Site Classes I, II, and III) unless the proposed change would be in the public interest.
- 1e. All rezonings, both normal and immediate, of TPZ lands to other uses shall meet the findings, standards, and procedures of the Forest Taxation Reform Act (as amended). Rezoning of non-TPZ timberland to uses other than those which include timber growing shall also meet the appropriate state timberland conversion permit requirements.

## GOAL #2

The County shall seek to make optimum use of its timber resources over the long term, consistent with other resource values.

### Policies

- I 2a. Request that a new, updated and comprehensive inventory of Mendocino County's timber resources be accomplished by forest scientists as soon as possible.
- 2b. Encourage use of the hardwood resources of the county. Promote co-generation of electric power from hardwoods and wood residues within existing environmental guidelines.
- 2c. Support and promote sound forest management practices (e.g. reforestation, timber stand improvement) and related public information programs for landowners through:
  - i) technical assistance available from the Mendocino County Resource Conservation District, the U.S. Soil Conservation Service, U.C. Cooperative Extension Service, California Department of Forestry and other interests with appropriate expertise
  - ii) financial assistance available from various sources (e.g., Calif. Dept. of Forestry, U.S. Agricultural Stabilization and Conservation Service.). The County shall actively seek necessary funding for this effort.
- 2d. Protect the public's interest in economically supplying its needs for forest products in this and future generations by:
  - i) promoting establishment, maintenance, and protective management of forest growing stocks needed to insure the long-term optimum productivity of such lands.
  - ii) encouraging maintenance of a supply which will have suitable diversified quality characteristics.

### GOAL #3

The County shall seek to minimize the conflicts between timber harvesting operations and other land and resource uses.

#### Policies

- 3a. Identify land uses which are supplemental, accessory and compatible with timber operations on forest lands within the zoning ordinance.
- 3b. Limit residential uses and subdivisions adjacent to TPZ lands to a low density standard (RR and RMR). Parcels contiguous to TPZ and classified RR shall have a 10-acre minimum, except a higher density may be allowed to recognize the average density of the existing parcel sizes, or if the new parcels are zoned Clustering (:C) or Planned Development (:PD).
- 3c. Encourage forest management practices on public and private lands which will avoid or minimize resource and land use conflicts.
- 3d. Require measures to prevent or mitigate fire hazards, where appropriate, on rural development proposals.
- 3e. Encourage enforcement of the State Forest Practice Act and attendant regulations. These regulations should be periodically reviewed to insure consistency with county goals and policies.
- 3f. Support the fire fighting work of the Calif. Dept. of Forestry and fire hazard reduction work by private landowners.
- 3g. Thorough research and consideration shall be given before Mendocino County supports any further State or Federal acquisition of private lands within the county.
- 3h. Continuous review should be made of proposed changes to Air Quality standards which might place severe limitations on present agricultural open burning practices for range and forest lands.

#### MAPS

See County-wide and CAC Area maps depicting timberland soil sites and Timber Preserve Zone lands.





## 7. MINERAL RESOURCES

### Issues

1. Continually increasing demand for mineral resources, particularly sand and gravel.
2. Potential for disruption of the environment and scenery by mining operations.
3. The degree to which reclamation should be required following mining operations.
4. Alternative sources for commercial development of mineral resources.
5. Benefits to County economy from mining operations.
6. Development of management plans for streambed aggregate sources.
7. Overriding criteria which would preclude development of mineral resources.
8. Monitoring and enforcement of mining operations to ensure adequate compliance with conditions and regulations, and to evaluate their effectiveness toward achieving adopted goals.
9. Uncertainty about location of all gravel operations, and the amount being extracted.
10. Need to conserve mineral resources.
11. Potential impacts of large-scale surface nickel mine on Red Mountains.

### Findings

#### A) Demand increases with population --

As population continues to increase, so does the demand for mineral resources necessary to satisfy requirements for both durable and consumable goods. The depletion of more easily recovered deposits results in the development of new sources.

#### B) Environmental disruption is cause of concern --

Recovery of mineral resources carries great potential for disruption of the environment. In 1975 the State enacted the Surface Mining and Reclamation Act to provide for the protection of significant mineral deposits and to ensure the reclamation of mined lands. Few, if any, County permits for mining operations escape opposition. The Department of Fish and Game continually urges that the County adopt watershed management plans for streams subjected to significant gravel extraction in order to protect other riparian resources such as wildlife and fish habitat.

C) Reclamation plans of mining site required --

The State requires local agencies to obtain reclamation plans from operators of surface mines. Comprehensive reclamation of surface mining operations can reduce the long-term adverse impacts and provide for a greater variety of subsequent uses.

D) Alternative sources may become necessary --

As the environmental costs of present mining practices are taken into account, it may become more economic to develop alternative sources for minerals. Rock outcrops, for instance, may replace streambeds as a source for aggregate.

E) Mining provides economic benefits to County --

The sand, gravel and stone industry in the county produced approximately 660,000 short tons valued at \$1,233,000 in 1977, according to the California Division of Mines and Geology. Other minerals found in the county include nickel, chromium, manganese, gemstones, coal and shale.

F) Streambed management plans needed --

The California Department of Fish and Game asks that gravel management plans which include the sustained yield concept be prepared for all stream drainages within the county. To retain anadromous fishery values, it is important that their spawning and nursery habitat be protected. The Board of Supervisors has indicated that a management plan should be prepared prior to further mining of Forsythe Creek. Management plans are being used in other counties to control mining of streambeds.

G) Overriding criteria may prohibit certain mining operations --

In certain instances there may be circumstances which would warrant prohibition of mining or other extraction of natural resources. Areas of unique scenic beauty, or sensitive wildlife habitat may be inappropriate for surface mining operations. Identification and mapping of such special areas is needed .

H) Monitoring program necessary --

An effective monitoring program is necessary if compliance with State and local regulations is to be ensured. Monitoring is also necessary to ensure that regulations and conditions are achieving the desired objectives. For example, cross-sections and volume data can be used to monitor recruitment relative to the amount of gravel removed.

I) Lack of enforcement --

Many operations are being conducted without benefit of any County permits; the locations of some are unknown or uncertain. Several operators have neglected to apply for County permits and other operators fail to comply with use permit conditions requiring cross-sections and volume information. As a result, information essential for establishing management plans and a system of sustained yield harvesting is not being gathered.



J) Local stream studies needed --

Little factual information is available specifying the magnitude of impacts of streambed gravel extraction for streams within Mendocino County. An on-going process for obtaining and analyzing useful information must be developed.

K) Low grade nickel ore found on Red Mountains --

The potential exists for a large-scale nickel mine on public and private lands on the Red Mountains east of Leggett. Mining for low-grade nickel ore on 13 square miles of land could begin when technological developments make it economically feasible. Local residents are concerned about possible impacts to the soil, air and water quality, fisheries, and the rural quality of life.

Mineral Resources  
Goals and Policies

GOAL #1

Provide for the conservation and production of mineral resources consistent with the preservation of values deriving from recreation, watershed, wildlife, fish, agriculture, air quality, soils, and aesthetic enjoyment.

Policies

- 1a. Discourage any land use which would jeopardize the potential or continued extraction of significant mineral deposits from an area.
- 1b. Recognize mineral information classified by the State geologist as required by the State Surface Mining and Reclamation Act.
- 1c. Periodically review mining regulations to ensure that only those regulations necessary to achieve County goals are imposed and that necessary regulations are designed to be effective at the least cost and inconvenience to mining operations.
- 1d. Establish and conduct a monitoring program, in conjunction with appropriate agencies, for mining operations sufficient to ensure compliance with conditions and regulations and to evaluate the effectiveness of conditions and regulations in achieving County goals.

GOAL #2

Development of mineral resources shall not destroy or unnecessarily disrupt fish, wildlife, watersheds, soils, agriculture, air quality, recreation or aesthetic enjoyment of the area.

Policies

- 2a. The County Surface Mining and Reclamation Ordinance shall be periodically reviewed to ensure that it reflects and achieves County objectives and goals.

- 2b. Watershed gravel management plans shall be developed to determine sustained yield formulas in cooperation with appropriate agencies, for streams subject to gravel extraction in amounts sufficient to endanger other riparian values, such as wildlife and fish habitat, recreation and aesthetic potential and water supply.
- 2c. An effective soil erosion and sediment control grading ordinance shall be adopted and implemented. Technical guidance shall be requested from the appropriate agencies.
- 2d. Development of mineral sources determined to be least disruptive to the environment shall be preferred over sources of more disruptive potential.
- 2e. Recovery of mineral resources shall not be permitted where it can be determined that the costs in disruption to the environment outweigh the benefits to the County to be derived.
- 2f. No permits for large-scale mining of the Red Mountains shall be issued by the County.

## 8. NATURAL AREAS

### Issues

1. Need for maintaining existing natural areas as environmental baselines, for educational and scientific purposes, and for providing scenic, spiritual and recreational values.
2. Disturbance or loss of unique landscapes and natural areas.
3. Alternative protection measures for critical natural areas on private lands.
4. Protection of representative biotic communities of local, state and national significance.
5. Wilderness designation of certain public lands for inclusion in the State or National Wilderness Preservation Systems.
6. Conflicts between preservation and development of natural areas.

### Findings

- A) Many local natural areas have been identified --

Mendocino County is fortunate to still have many natural areas worthy of protection, unlike the urbanized counties to the south. The California Natural Areas Coordinating Council developed an Inventory of California Natural Areas, the result of work by some 300 professional scientists and dedicated amateurs from all parts of the state. This Inventory identified 59 different natural areas within the county with diverse biological and geological features. Sizes of the natural areas range from 8 acres to 9,000 acres. Although both public and private ownerships are included, most of the listed areas are not fully protected and are subject to destruction. Examples are Little Lake Valley, portions of the Pygmy Forest, and Red Mountain. The county, however, has no jurisdiction over public lands it does not own.

- B) Natural areas provide valuable benefits --

Since very little of the county has escaped from the impact of man, the definition of "natural" tends to be a relative one. Some areas are unique or of particular scientific or educational interest, such as habitats of rare or endangered plant and animal species, relict populations, or noteworthy geological features. Natural areas also provide valuable environmental baselines with which to compare the effects of land use changes and resource management. One such baseline area is the drainage basin of Elder Creek, which is one of the few remaining pristine watersheds in the State and is maintained as a research area under private and public management. Plant and animal communities representative of various ones found in the State are important to identify and protect because their existence must be planned for if they are to continue to survive.

C) Wilderness studies continue on public lands --

Mendocino County currently has no public land designated wilderness under either the State or National Wilderness Preservation Systems. Both the U.S. Forest Service and the Bureau of Land Management have identified roadless areas on their lands within the county which qualify for wilderness designations. Official designation of federal wilderness is made by Congress under the Wilderness Act, which provides for maximum protection of qualified natural areas, usually over 5,000 acres in size. The potential wilderness areas on federal lands are presently being studied for their wilderness characteristics. For state-owned lands, Sinkyone Wilderness State Park may also qualify for official state designation. In total, potential wilderness areas on public lands amount to about 3% of the county area.

D) Alternatives to public acquisition of natural areas needed --

Although several prime natural areas have been acquired by public agencies, other methods to protect pristine lands from destructive uses will become increasingly important in the future. Acquisition funds are becoming harder to obtain, land values are escalating rapidly, and opponents to additional public land ownership are more adamant. Public sentiment to preserve wilderness qualities, however, does not seem to be declining, according to recent state and national polls. Possible alternatives to acquisition include conservation and scenic easements, purchase or transfer of development rights, protective zoning, or dedication.

Natural Areas  
Goals and Policies

Goal #1

Mendocino County shall support the preservation of natural areas now in public ownership.

Policies

- 1a. Encourage improved management of publically owned and administered areas to prevent damage to sensitive areas and to maintain their natural character.
- 1b. Request public land management agencies to:
  - i. direct and encourage compatible, low impact recreational activities in the vicinity of sensitive areas to discourage vandalism.
  - ii. direct high impact recreational activities (off-road vehicles, campgrounds, parking lots, etc.) away from sensitive areas,
  - iii. discourage any further encroachment on lands by high-intensity, damaging off-road vehicles.
- 1c. Encourage "baseline" environmental studies in Jackson State Forest.



## Goal #2

Mendocino County shall take positive measures to preserve natural areas now under private ownership.

## Policies

- 2a. Mendocino County shall, on all land use and planning decisions, consider the preservation of any natural areas that have been identified.

## MAPS

See County-wide and CAC Area "Biological Resources" Maps depicting natural areas (as identified by the California Natural Areas Coordinating Council.)



## 9. PUBLIC LANDS

### Issues

1. Conflicts between activities on contiguous private and public lands.
2. Existing and potential ability of public lands to provide needed natural resources.
3. Existing public ownership of mineral rights on private lands.
4. Effect of resource management policies and practices of state and federal public land agencies on local communities and environmental quality.
5. Public acquisition of private land for parks and reserves, and the impact on local tax base and income.
6. Concern over appropriate use of public lands.
7. Cost of acquisition and maintenance of public lands.

### Findings

- A) Less than one-fifth of the County is publicly owned --

Of the County's 2,246,000 acres, approximately 17% are public lands. The County and four cities own 0.5%, which includes public buildings, schools, special districts, parks, and roads. State-owned lands total 3.7% and are used for a variety of purposes: forestry, parks scientific research, shoreline access, recreation, highways and other uses. Federal lands involve 13% of the County and are managed by such agencies as the U.S. Forest Service, Bureau of Land Management (BLM), Corps of Engineers, Coast Guard and others. In addition, 0.8% are Indian lands (Reservation or rancheria) which are individually or tribally owned.

(For a detailed listing of public lands ownership, see Appendix)

- B) Public lands managed for resource protection and production --

Public forests, both state and federal, contain 16% of Mendocino's commercial forest area and 24% of its sawtimber. Jackson State Forest is managed as a demonstration forest for the production of timber. Timber sales from the Mendocino National Forest contributes about 6% of the timber manufactured in the county. In addition to timber sales, the National Forest earns money from recreation and grazing fees and returns 25% of all of these receipts to the County for schools and roads, amounting to about \$300,000 in 1978 for the County. Geothermal development on BLM's lands in the southeast corner of the County is a recent activity, with more planned for the future.

Multiple-use management by the federal land management agencies provides also for wildlife, fisheries, water quality, and mineral production. Public lands in Mendocino County provide habitat for species that are considered "sensitive" by the Federal land management agencies. Some

of these species have been virtually eliminated on private land by habitat destruction. Future destruction of wildlife habitat on public lands may result in the listing of these species by the Federal or State government as rare, threatened, or endangered.

C) Local economy affected by public lands --

All federal lands within the County contribute payments in-lieu-of taxes to partially offset the impact of their tax-exempt status. The federal payment formula is based on acreage, population, and other payments for programs for sale of public lands or resources such as timber, minerals, oil and gas, or grazing privileges. In FY 1977-78, \$170,000 in-lieu taxes were paid to the County. The economy of communities dependent on resource products from the public lands can be directly affected by changes in production levels. A boom-and-bust effect, for instance, could occur if production increases beyond sustained yield levels, and a slow-down later becomes necessary to avoid depletion, or when depletion occurs.

State Parks do not pay in-lieu taxes to the county, but they do attract tourists who contribute significantly to the local economy.

D) Mineral rights owned by the public on some private lands --

As the result of a recent U.S. Supreme Court decision, subsurface geothermal rights became officially reserved to the U.S. on lands patented under the 1916 Homestead Act. The BLM administers these mineral rights on private lands and can sell leases to develop the resource. One problem that can result is the fact that a private developer can drill on another person's property, even if the surface landowner objects.

E) Use of public lands may conflict with private land use --

Incompatible uses can occur on adjacent public and private lands. For instance, residential development is not compatible with logging areas nor is an intensive use public recreation area harmonious with sheep ranching. Since public ownership can be scattered, and isolated access to these parcels may have to go through private lands. Some private landowners voluntarily provide access, but others are adamantly opposed to letting agency personnel cross their lands. In such cases, condemnation of access may be used in order to manage or log the public parcel. Public land agencies, however, are required to provide access through their lands to private inholdings.

F) State Parks propose to acquire more lands --

Continuing to preserve significant features on the coastal strip and examples of the coast redwood forest is a goal of the State Park System and is supported by recent state ballot bond measures for more park acquisition. Addition of 1,663 acres to existing State Parks and Reserves in the County has been funded but not completed. Local reaction to more park acquisition is mixed; some people resent the large intrusion of tourists into the areas and removal of private lands from the tax base, while others enjoy the positive impact on the economy the tourists provide and the protection of scenic and natural areas.



- G) Resource planning for public lands allows local coordination --

Current planning efforts of the Forest Service, BLM, and the State Parks provide a good opportunity to assure consistency with the County's plans. A memorandum of understanding between the County and BLM is under consideration which would facilitate coordination of permit processing for mining permits subject to joint review. The County government needs to be kept aware of changes in public land management.

## PUBLIC LANDS GOALS AND POLICIES

### Goal

The County shall maintain interest in the responsible planning and management of public lands.

### Policies

- a. Coordinate with state and federal public land agencies in their planning efforts to ensure compatibility with local plans.
- b. Encourage public land agencies to manage their resource production on a sustained yield basis which will provide a stable local income.
- c. Promote forest management practices on public lands which avoid or minimize resource and land use conflicts.
- d. Encourage well-publicized local public input meetings when the use of public lands is being determined or changed.
- e. Promote cooperation between public agencies and private owners of contiguous parcels, including cooperative management plans and land exchange for improved management units.
- f. Request that agencies administering contiguous public lands cooperate in their planning for land use, continuity of roads and trails, and recreation facilities.
- g. Review all general plans prepared by the California Department of Parks and Recreation for its facilities within Mendocino County to ensure compatibility with the goals and policies of the Mendocino County General Plan.
- h. Thorough research and consideration shall be given before Mendocino County supports any further State or Federal acquisition of private lands within the County.
- i. Seek in-lieu tax reimbursement from the State for lands purchased for State Parks.
- j. Encourage the State to adequately fund the development and management of existing State Parks in the County, as soon as possible.

### Maps

See County-wide and CAC area maps depicting State and Federal public lands.



## 10. SCENIC RESOURCES

### Issues

1. Alteration of the natural appearance of scenic landscapes.
2. Maintenance of scenic views from designated scenic highways.
3. Preservation of significant historical and architectural landmarks.
4. Unsightliness of certain land uses, and activities (e.g., utility lines, signs, landfills, vegetation clearing and cut/fill slopes).
5. Impact of air pollution on scenic quality.
6. Protection of scenic qualities and those sections of the Eel River included in the State Wild and Scenic Rivers Act.

### Findings

- A) Mendocino County's scenery is one of its finest assets --

The rural and rugged nature of the county offers an abundance of scenic vistas, agricultural activity and broad expanses of valley land contrasted with rolling hills and distant peaks. A spectacular stretch of Pacific coastline is among the predominant characteristics of the County's scenic resources. Tourists are well acquainted with these qualities and the existence of such magnificent scenery is an important factor in sustaining an active tourist industry. Continued human activity leaves its mark on the landscape, with both positive and negative results to the viewshed.

- B) Two routes have been designated Scenic Highways --

The Scenic Highways Element (1977) of the General Plan recommends the designation of State Route 1 (91 miles) and State Route 162 (Longvale to Inspiration Point) as official state scenic highways. A corridor study is also recommended for the above mentioned routes to determine the scenic qualities requiring protection and to help establish corridor boundaries. To date, this proposed study has not been done. A plan prescribing the manner in which the scenic quality of the corridor would be protected is to be based on the corridor study.

In addition, several communities have made policy recommendations for the protection of the natural character of their scenic corridors. Laytonville wants several roads in their area to be designated as scenic highways, while Anderson Valley desires local ordinances to ensure scenic protection of the valley.

- C) Preservation of significant historical and architectural landmarks --

Historical and architectural landmarks are addressed in a separate section (see page I-77).

- D) Certain development patterns and land use activities reduce scenic qualities --

Billboards, earthmoving, unfenced junk storage, power lines, garish building and sign designs, and open equipment yards are among the many types of uses which can detract from the natural scenic environment. Additionally, land use patterns such as strip commercial development and urban spread could lead to extension of unattractive conditions.

- E) Eel River is part of State Wild and Scenic River System --

The Eel River was selected by the State Legislature as one of several rivers in the State "Which possess extraordinary scenic, recreational, fishery, or wildlife values" and are to be "preserved in their free-flowing state, together with their immediate environments, for the benefit and enjoyment of the people of the State." After classification of appropriate sections of the Eel River and its major tributaries (Middle, North and South Forks) as "wild", "scenic", or "recreational", a management plan is to be prepared by the State Resources Agency which will guide administration of the river so as to "protect and enhance the values for which it was included in the system, without unreasonably limiting lumbering, grazing and other resource uses, where the extent and nature of such uses do not conflict with public use and enjoyment to these "values". The Eel River will be reevaluated in 1984 for the need to keep it in the State system.

### SCENIC RESOURCES GOALS AND POLICIES

#### Goal

The County shall protect and enhance its rural character and natural and man-made scenic resources.

#### Policies

- I
- a. On and off premise signs and other advertising shall be developed in compliance with the Mendocino County Sign Ordinance.
  - b. Continue to identify scenic areas within the County which deserve special protection.
  - c. All discretionary development proposals, rezonings and use permits should reflect the need to protect the visual character of scenic areas. Any new uses permitted in a designated scenic area shall be designed and located to minimize visual impact and blend with the natural environment.
  - d. Discourage commercial strip development and urban sprawl.
- I
- e. Review the Scenic Highways Element periodically to evaluate its effectiveness in achieving the above goal and revise as necessary.



- f. Protect and maintain the outstanding aesthetic values associated with those portions of the Eel River in the State Wild and Scenic River System by allowing only compatible uses in accordance with their classification (i.e., recreational, scenic, and wild). Particular attention shall be given to roads and river access improvements.
- g. Investigate use of controlled billboard advertising on urban and community highway approaches. Government-leased sign space could be provided at highway exits, indicating specific establishments available.
- h. New transmission lines shall be located along established transmission line routes where possible. Elsewhere, transmission lines shall be located so as to avoid vegetation removal, new road construction, and silhouettes against the sky. Encourage the underground installation of utilities.
- i. Require adequate landscaping of all new residential subdivisions, mobile home parks, and commercial and industrial uses to enhance the scenic qualities of the area.
- j. Continue the protection of the scenic qualities of the uplands through timber preserve and agricultural preserve zoning controls and good management of the public lands.



## 11. SOIL RESOURCES

### Issues

1. Maintenance of the quality and productivity of range, crop and forest soils.
2. Capability of soils to percolate for standard septic tank use.
3. Landsliding on steep lands due to natural and man-made causes.
4. Soil erosion related to construction activity, road building, logging, poor cultivation practice and over grazing.
5. Accelerated streambank erosion.
6. Trade-off between protecting prime soils and providing for economic and social needs.
7. Need for definition of vacant prime soil areas which may be lost to resource production due to inadequate parcel sizes.
8. Pygmy soils present serious limitations for septic system percolation.

### Findings

- A) Soils of Mendocino County have special resource capabilities and limitations --

Approximately three-fourths of the total land area of the County can be classified as prime soils (as defined by County ordinance) with good to superior characteristics for crop, range and timber production. The continued productivity of these soils is also essential to the future of these resource lands. The inherent instability and erodibility of soils and rock of much of the County, however, places limitations on the way the soils can be treated.

For instance, the Eel River has the highest recorded average annual suspended-sediment yield per square mile of drainage area of any river of its size or larger in the United States. The Eel River basin's erosion rate is a major watershed management problem.

Unique soil types near the coast result in pygmy and pygmy-type vegetation. Besides causing stunted forest growth, these soils have a hardpan which inhibits water percolation from septic system leaching fields.

- B) Soil is not a renewable resource over the short term --

Degradation of the soil resource occurs when the rate of soil erosion exceeds the rate of natural soil formation. Studies of the North Coast have shown that the rate of natural soil regeneration is presently one-tenth to one-hundredth the rate of soil loss. Mendocino County sheet and rill erosion rate estimates often exceed 10 tons per acre on brushlands, access roads, construction sites and some rangelands. These estimates are from spot checks performed by Soil Conservation Service personnel. Areas checked after timber harvests have yielded estimated rates of 1.2

to 8 tons per acre where checked, while unharvested (within 3-5 years) timberlands have rates of less than one ton. While these erosion rate samples are not numerous enough to be a statistical sample for the County, they were random samples and indicate a major problem in some areas. Average erosion rates of 1-2 tons per acre per year on most upland soils are probably realistic natural soil loss rates due to their location on steep slopes and shallow soil depths. These estimates do not include losses from land slip and gully erosion.

C) Unsuitability of certain parcels for septic tanks --

Some parcels of land in the County are not suitable for the proper functioning of septic tanks because of soil conditions and depth, ground slope, depth to ground water, and size. Property owners of these sites are disturbed to discover they have "unbuildable" land using conventional septic tank/leachfield systems. (For further findings and for related Goals and Policies, see "Water Resources".)

D) Streambank erosion is a major source of erosion and sediment pollution --

According to the Mendocino County Resource Conservation District, streambank erosion is a "major source of erosion and sediment pollution". Damage has occurred in some areas of the County, most notably along Forsythe Creek and the Russian River. Streambank erosion can lead to losses of productive farm land, personal property, and fish habitat. Potential causes include upstream watershed disturbance, alteration of streamflow by diversion or obstructions, and excessive gravel extraction. Retaining or establishing vegetation along streams has been shown to help stabilize streambanks.

E) Landslides are common --

Each year landslides and earthflows along roads cause inconvenience, property damage, and sometimes bodily harm to Mendocino County motorists. Many of the common soil types found in the County have a high potential for such landslides. Other land uses and resources are also impaired by the effects of major soil movements. While some of the slides are naturally caused, human-related causes include road construction, vegetation removal, and residential development on landslide-prone soils. Of these causes, road construction is certainly the primary man-made cause.

F) Construction-related erosion is not regulated --

Grading activities related to building come under the jurisdiction of Chapter 70 of the Uniform Building Code as part of the building permit process. The standards described are mainly engineering standards and do not address erosion prevention or water quality protection. In addition, no controls currently regulate soil-disturbing activities unrelated to the building site (Timber harvesting activities are regulated; see "Forestry").

G) New soil survey in progress --

A new soil survey of all the County (excluding Forest Service lands) is currently underway by the U.S. Soil Conservation Service which will present some soils information in a more detailed and accurate fashion



than the 1952 Soil-Vegetation Survey and the 1973 Bottomlands Soil Survey currently in use. The survey's expected publication date for the eastern half of the County is 1991; a published survey for the western half will not be complete until approximately 1995. The Soil Conservation Service is working to make the Universal Soil Loss Equation (USLE) useful for local application in estimating sheet and rill erosion rates on various soil types and land uses.

The information presented in the new soil survey will define and depict soil types in the County in much greater geological detail, giving survey users a more definite idea of the soil composition at a particular location(s).

This new survey, however, is not anticipated to contain adequate information to define whether or not soil on a particular site could be considered a "prime soil", as defined in the General Plan. Current General Plan policies have been formulated, in part, for soil resources identified in the 1952 Soil-Vegetation survey and/or the 1973 Bottomlands Soil Survey. These surveys classify soils as non-prime, or as prime agricultural, prime timberland, or prime rangeland, based on potential production rates for crops, grazing, and/or timber production. The new soil surveys from the Soil Conservation Service should be used (when available) in conjunction with the existing 1952 Soil-Vegetation Survey and the 1973 Bottomlands Soil Survey to ensure that the most complete soil information is available in determining a project's consistency with General Plan policies.

#### SOIL RESOURCES GOALS AND POLICIES

##### Goal Number 1

The County shall seek to reduce soil loss in order to maintain productivity of the soil resource and reduce sediment pollution.

##### Policies

- 1a. Support the development of a monitoring system in conjunction with the Mendocino County Resource Conservation District to measure the erosion rates on various soil types under different land uses.
- 1b. Set as a maximum target figure an erosion rate commensurate with soil types and monitoring results of Number 1a.
- 1c. Support and promote improved soil conservation and erosion control practices by private land owners and managers through:
  - i. Technical assistance available from the Mendocino County Resource Conservation District, Soil Conservation Service, U.C. Cooperative Extension Service, California Department of Forestry, and others.
  - ii. Financial assistance available from the state and federal agencies (i.e., California Department of Forestry, U.S. Agricultural Stabilization and Conservation Service). The County shall actively seek necessary funding for this effort.
  - iii. Enforcement of existing regulations.

- 1d. A grading ordinance, compatible with Chapter 70 of the Uniform Building Code and exempting regulated lands, shall be adopted and implemented. Technical guidance will be requested from agencies with appropriate expertise.
- 1e. Update County soils maps and types identified by the Soil Conservation Service's new Soil Survey as soon as available.
- 1f. Support State timber harvest regulations which will minimize soil erosion.

#### Goal Number 2

The County shall minimize erosion from all projects undertaken by the County.

#### Policies

- 2a. Identify erosion problems along County roads and other County facilities and establish a program to eliminate the problems.
- 2b. All proposed County projects shall include an assessment of erosion potential and shall initiate prevention measures.

#### Goal Number 3

The County shall help prevent and stabilize streambank erosion.

#### Policies

- 3a. Protect streamside (riparian) vegetation.
- I 3b. Protect streamside (riparian) vegetation by appropriate standards in zoning ordinances.

#### Goal Number 4

The County shall ensure that the limitations of certain soil types are reflected in project design and approval.

#### Policies

- 4a. Limit new development on soil types characterized by pygmy and pygmy-type vegetation to a low density (defined as 2 to 5 acres). Consideration of higher density will be given based on availability of an approved alternative sewer or waste water systems.
- 4b. Road and building site construction should avoid areas which exceed a 30 percent slope.

#### Maps

See County-wide and CAC Area maps depicting "Upland Soils" and timber/range/bottomland soil capabilities.

Some animal species are quite dependent on the existence of certain plant communities. Wetlands, for instance, serve as vital links in the Pacific Flyway used by large number of migratory waterfowl and water-associated bird species. They also provide food, cover, water and living space to a large variety of resident wildlife. Important wetlands in the county are found along the coast and in Little Lake and Round Valleys during winter. Old growth forests, rapidly diminishing in the last few decades from heavy logging, are extremely important to cavity nesting birds and mammals, whose numbers are declining as the habitat declines. Riparian vegetation is also valuable habitat, as discussed in #D above, but a good deal has been lost to agriculture and firewood cutting.

G) Opportunities for wildlife habitat improvement and protection--

With the artificial suppression of wild fire, plant communities such as chaparral are no longer periodically burned as they once were. As a result, chaparral lose a great part of their food value for wildlife if not burned every 7-20 years. Occasional prescription burning and reseeding can be beneficial for grazing animals by promoting new growth and increasing accessibility. Fuel or vegetation control efforts, which include prescription burning and mechanical or manual removal, are currently underway in some areas of the county as part of an interagency program. In addition, the Water Bank Program of the U.S. Department of Agriculture provides financial incentives for landowners to maintain natural wetlands for wildlife use. Some landowners, like those involved in the private Rock Tree Valley Wildlife Sanctuary near Willits, are interested in protecting wildlife habitat even without financial incentives.

H) High populations of game animals produce excellent hunting--

Mendocino County is the leading county in the state for the number of deer killed each hunting season, reflecting the fact that it also supports the highest densities of deer statewide. The California Department of Fish and Game believes this high population is due to the good quality deer range and that 95% of the county is deer habitat. Other popular game animals include feral pigs, bear, quail, band-tailed pigeons, blue grouse, and rabbit. Hunters come from all over the state to enjoy the excellent hunting opportunities.

I) Wildlife harmed by rural developments --

According to the Calif. Dept. of Fish and Game, the impacts of rural subdivisions on wildlife are caused by harassment by dogs brought in new residents; disturbance by human habitation; actual elimination of habitat by construction of dwellings and outbuildings; disturbance of territories by fencing; destruction of water sources by excess live-stock grazing (commonly seen when city people move to the country); reduction and elimination of water in springs when tapped for residential use, and the elimination of oak trees (a major food source for many wildlife species) for firewood cutting and land clearing activities.

These problems are illustrated by the deer population, which is now about half of what it was in the early 1960's. Many factors have



contributed to the decline, though rural development has been one of the major causes. Subdivision of parcels of 40 acres or less in size will usually result, says Fish and Game wildlife biologists, in a decrease of greater than 50 percent and in some cases as high as 95 percent of the deer population. Other wildlife species respond in a similar manner. Poaching of deer is also a serious problem. It is estimated that the number of illegally taken deer at least equal, if not exceed, the annual legal take during hunting season plus those killed on roads by vehicles.

J. Areas of Special Biological Importance identified --

Areas of Special Biological Importance (ASBI) were recently identified in the County by California Department of Fish and Game field and staff biologists. These areas are of special importance for one or more kinds of wildlife and are considered to be particularly sensitive to development. The ASBI map of the County is intended to provide an "early warning" so that potential adverse impacts on the areas can be identified and reduced or avoided. While almost all of the non-urban lands in the County can be considered wildlife habitat, the ASBI map only shows those areas currently known to be most important to certain wildlife, as noted on the County Biological Resources Map.

VEGETATION AND WILDLIFE GOALS AND POLICIES

Goal

The County shall protect and maintain its native vegetation and wildlife.

Policies

- a. Mendocino County Grading Ordinance shall be adopted and implemented, which will include reasonable measures to:
  - i. retain and restore riparian vegetation,
  - ii. protect and retain natural vegetation in or near construction and road-building sites.
- b. A plant species listed as rare or endangered on the California Native Plant Society list shall be protected unless the public benefit clearly warrants its destruction. The California Department of Fish and Game and the Society shall be notified of proposed projects which may affect any of the rare plants.
- c. Encourage land uses and management practices which provide for a natural diversity of plant communities and wildlife habitat.
- d. Identify the type and intensity of land uses which may be compatible with critical wildlife habitats such as wetlands, deer wintering ranges, old growth forests and riparian vegetation. Develop appropriate protection and mitigation methods when considering new development.



- e. Continue to identify and map areas of critical wildlife habitat, particularly riparian vegetation.
- f. Support and promote wildlife habitat protection and improvement and endangered species protection on private lands through:
  - i. technical assistance provided by California Department of Fish and Game, U.S. Fish and Wildlife Service, Soil Conservation Service, Farm Advisor's Office.
  - ii. financial assistance available from Agricultural Stabilization and Conservation Service (ASCS), county fish and game fines, State Wildlife Conservation Board, California Department of Forestry.
  - iii. inclusion of valuable habitat lands in Ag Preserve designation.
- g. Require enforcement of current animal control ordinance to reduce dog predation on native wildlife. Measures to prevent or mitigate dog predation shall be applied, where appropriate, to rural development proposals.
- h. Promote protection of rare and unique vegetation through appropriate zoning or management prescriptions.
- i. Support a vegetation management program to control pest species and to improve the availability and quality of browse for wildlife and livestock, providing such a program does not conflict with the other policies of this goal. Prescribed burning is recognized as a valuable tool in wildlife management.
- j. An animal species officially listed on the State and Federal Rare and Endangered Species Lists shall be protected by seeking and following the recommendations of the California Department of Fish and Game or the U.S. Fish and Wildlife Service.
- k. Encourage, wherever possible, the use of native plants for landscaping of public buildings, parks, roadsides, and other public facilities. Encourage Caltrans to use native plants for highway landscaping.
- l. Discourage the introduction of non-native animal and plant species unless this introduction is clearly in the public interest and the California Department of Fish and Game determines that the introduced species can be confined to its intended range. Requires private owners of exotic game species to confine these birds and mammals to their properties.
- m. Support enforcement of existing laws against the shooting of protected birds and allowing dogs to run loose and destroy wildlife. Recognize that dense residential development or the opening of areas to heavy public use will increase these problems.

- n. Any land use change which may have a potential impact on an Area of Special Biological Importance (ASBI) shall first be checked with the Calif. Dept. of Fish and Game for further information regarding the significance of the change.
- o. Private property owners who find that they have a rare or endangered species on their property should be made to feel privileged rather than punished by giving them special recognition.

#### MAPS

See County-wide and CAC Area "Biological Resources" map depicting rare and endangered plant locations, sensitive wildlife habitat, and Areas of Special Biological Importance.

### 13. WATER RESOURCES

#### Issues

##### Water Quality

- a. Existing and potential contamination of water supplies from septic tank seepage, other sewage, industrial waste disposal sites spills, and surface mining.
- b. Increased sedimentation of streams and reservoirs due to soil-disturbing activities and poor condition of the watershed.
- c. Alternative waste-disposal systems for rural development
- d. Potential contamination of drinking water and streams from improper use of chemical sprays.
- e. Areas of county with naturally poor water quality (e.g., iron, boron and sulfur).
- f. Adequate control of toxic substances.
- g. Adverse effect on recreation, tourism and fisheries by poor water quality.

##### Water Supply

- a. Inadequate water supply for existing and/or future uses in certain areas of the county.
- b. Reduced in-stream flows resulting from diversions for municipal, agricultural, and industrial water supplies.
- c. Out-of-county pressures to dam and export Eel River water.
- d. Potential supply resulting from water conservation practices by all water users.
- e. Uncertainty about the location and quantity of groundwater and its recharge areas.
- f. Urban encroachment upon the groundwater recharge areas.
- g. Lack of water rights for existing in-stream uses, such as fish and recreation.
- h. Lowered water table and reduced well yields caused by excessive demand, streambed degradation, or poor hydrologic condition of the watershed.
- i. Competition for limited Russian River Basin's water.

##### Water Excesses

- a. Reduction of losses caused by flooding through structural and/or non-structural measures

- b. Increased peak stream flows from poor land conditions, causing rapid runoff and low infiltration rates.
- c. Potential damage to groundwater storage by flood control measures.

## Findings

### Water Quality

#### A) Water quality controls addressed by Regional Plan --

The Water Quality Control Plan, No. Coastal Basin, was adopted by the State Water Resources Control Board and the North Coast Regional Water Quality Control Board, (April 1975, as amended) to "provide a definitive program of actions designed to preserve and enhance water quality and to protect beneficial uses of water for the next 25 to 30 years". The State and Regional Boards have primary responsibility for maintenance of water quality in the county. In addition, the California Dept. of Fish and Game and the County Environmental Health Department have codes and ordinances which also provide for water quality protection.

#### B) Poorly functioning septic systems--

Improper location and/or operation of septic tanks and other individual wastewater systems can seriously impair the use of water for water supply, recreation, and fish and wildlife habitat. Examples of where such problems have occurred include Laytonville and an area south of Fort Bragg. In such instances the County Environmental Health Department and the North Coast Regional Water Quality Control Board have placed restraining orders on new building until the problem is corrected.

To avoid such problems in the future, the Regional Board has adopted a "Policy on the Control of Water Quality with Respect to Individual Waste Treatment and Disposal Practices" as part of its Basin Plan. This policy requires local agencies to make their ordinances compatible with the provisions of the policy.

#### C) Unsuitability of certain parcels for septic tanks--

Certain parcels of land in the county are not suitable for the proper functioning of conventional septic tanks systems because of soil conditions and depth, ground slope, depth to ground water, and size. These unsuitable or marginal parcels, however, are still in demand for development. Property owners of these sites are disturbed to discover they have "unbuildable" land using conventional septic tank/leachfield systems.

#### D) Public management of on-site wastewater systems is possible--

Mendocino County's Environmental Health Department has established criteria for the operation of septic tank districts. To improve the design, construction, and maintenance of on-site wastewater systems such as septic systems, the State has also provided for the creation of On-Site Wastewater Management Zones. These zones can operate within the areas of certain public agencies that presently have the power to



construct and operate public sewer systems and treatment plants. Formation of such a zone would assure public maintenance responsibility and could also allow for the development of common leachfield areas to serve parcels which otherwise might be unbuildable or have no means for repair if currently failing.

E) Alternative wastewater disposal methods are being studied --

Alternatives to conventional septic tank systems, such as mound systems and certain waterless toilets, are being reviewed and evaluated by the County and State health departments, the Regional Water Quality Control Board, and the Calif. Office of Appropriate Technology as part of a statewide study called the "Rural Wastewater Disposal Alternatives Project". In rural areas of the county, these alternative systems may be a possible substitute for sewerage parcels which are unsuitable for septic tanks. Their cost-effectiveness, reliability, and health acceptability are being evaluated before they will be routinely approved. Adequate maintenance is a major concern. The final report of the state study will offer guidelines and educational criteria for the installation, maintenance and operation of systems found to be acceptable for use.

F) Sedimentation and siltation of our streams and reservoirs --

Soil-disturbances associated with human activities have caused a significant increase in siltation and sedimentation of our streams and reservoirs. Vegetation removal, for instance, causes water to run off slopes more rapidly, causing increased erosion. The resulting water pollution causes damage or losses to fish habitat and fish populations, impairs water-related recreation and tourism, reduces the lifespan of reservoirs, and can increase flood damage. Major soil-disturbing activities include road-building, logging, vegetation clearing, overgrazing, mining, and certain agricultural practices. The Regional Board's waste discharge requirements, the Calif. Dept. of Fish and Game's stream protection agreements provide some controls on certain soil-disturbing projects. Other projects lack adequate controls, such as private road-building (except for logging roads).

G) Aerial spraying of herbicides and pesticides may contaminate water supplies --

Considerable concern exists among the county's residents over the aerial spraying of phenoxy herbicides near water supplies, particularly because of the dangers of drift. While the state and federal regulatory agencies for water quality have severely restricted the use of these herbicides, the voters of Mendocino County also decided (by a vote of two to one) in June 1979 to ban their aerial application. No regular monitoring occurs now of pesticide and agricultural chemicals in the county's streams or groundwater.

H) Industrial wastes, particularly toxic substances, can have serious water quality impacts --

Waste discharges from industrial processes may include toxic substances

such as mercury, arsenic or cadmium, which can reach concentrations in streams and groundwater harmful to humans or aquatic life. Once in the water supply they become very difficult to remove. Toxic elements accumulate through the aquatic food web and the effects may not be seen for many years. Plants may be damaged at low levels of toxicants, particularly cadmium. Although the Regional Water Quality Control Board has set standards for toxic substances, their measurement is a major problem and detection may be delayed with only periodic monitoring.

## Findings

### Water Supply

#### A) Insufficient water supply for development --

Current water supplies limit the potential growth of agriculture as well as urban and residential development in certain areas of the county. Some existing parcels of land, particularly in the foothill and mountainous portions of the county, lack adequate water for development of any kind. In the coastal region, groundwater is the primary source and is in very limited quantities.

#### B) Inadequate information on ground water supplies --

More and more wells are being drilled to serve new development yet little is known about the location or capacity of the groundwater aquifers. Better estimates of ground water availability is needed so development will not surpass the capacity. A special inter-agency cooperative study of the county's ground water basins is being performed which should provide much needed information.

#### C) Inadequate information on water use --

The most recent, county-wide study of water use and needs dates back to 1968-70. Data is most inadequate in non-metered and non-irrigated areas of the County.

#### D) Water conservation practices reduce demand--

Water conservation, which reduces the demand for water use, can have the effect of increasing the availability of water. The drought of 1976-77 demonstrated that conservation practices by all users of water-- agriculture, commercial, industrial and residential -- can substantially reduce consumption. Water conservation is currently not widely practiced in the county.

#### E) Reduced in-stream flows due to diversions and poor hydrologic condition of watershed--

Lowered in-stream flows, as a result of diversions for water supplies, can impair other water uses such as fish and wildlife habitat and recreation. The main Eel River below Van Arsdale is an obvious example, where most of the flow has been diverted to the Russian River. In late 1979, an agreement was reached between all the parties concerned about stream flows in the Eel and Russian Rivers resulting from the Potter

Valley Project. Various stream flows will be maintained by P.G.&E. for three years while studies are made of the effect of different minimum flows. A permanent flow schedule is hoped to be agreed upon by July 1982.

Numerous smaller streams are also affected throughout the County by diversions and poor watershed conditions. Poor conditions, such as land with little plant cover or much paved area, cause rapid water runoff and less water infiltration into the ground, which prolongs stream flow and irrigation supplies.

F) Urban encroachment upon water recharge areas --

Urban development and its accompanying increase in impervious surfaces, such as parking lots and buildings, can reduce the groundwater recharge area. Precipitation and irrigation tends to run off these impervious surfaces into gutters, stormdrains, and streams rather than percolate through the ground into the aquifer. Flooding also increases as a direct result of this increased runoff. These recharge areas, however, are not currently identified or protected.

G) Inadequacy of current State water rights laws --

The California system of water rights and water rights law is outmoded and inadequate to provide security of rights and efficiency of water use, according to the recent report of the Governor's Commission to Review California Water Rights Law. Lack of security inhibits investments and may reduce the value of the water right, while lack of efficiency can affect the economic productivity of alternative uses of water. Without more efficient use and management of water in the State, the exportation of North Coast water will be inevitable. Current groundwater rights do not protect groundwater users from a serious depletion caused by excessive extraction. In addition, water rights for the consumptive use of stream water have not provided for an adequate supply to sustain the aquatic life, and recreational and aesthetic values of a stream.

H) Pressures to dam and export Eel River continue --

Those portions of the Eel River included in the State Wild and Scenic Rivers Act are only ensured protection from new dams and reservoirs until 1984. At that time, the California Department of Water Resources "shall report to the Legislature as to the need for water supply and flood control projects on the Eel River and its tributaries, and the Legislature shall hold public hearings to determine whether legislation should be enacted to delete all or any segment of the river from the system."

Demands for the development and exportation of Eel River water continue to be heard from Central Valley and Southern California interests.

I) Small dams may increase local water supplies --

Small reservoirs could help increase the reliability of local water supplies. During periods of surplus waters, the storage of water in offstream reservoirs could serve the advantage of capturing winter runoff for storage and ultimate use during periods of low summer



flow when streams are generally in short supply. While cheaper and less damaging than large dams, small dams are also expensive to build and maintain. They might not be practical on streams that carry a heavy sediment load.

J) Russian River Basin faces stiff competition for water --

The Mendocino County Flood Control and Water Conservation Improvement District has a water rights permit from the State Water Resources Control Board to use up to 8,000 acre-feet (11%) annually from the Russian River water stored in Lake Mendocino. In addition, the Sonoma County Water Agency and the North Marin County Water District have purchased storage rights in Lake Mendocino (89%) to maintain firm water supplies to their service areas. The Sonoma County Water Agency has recently petitioned the State Board to have its 37,544 acre-feet entitlement increased to 75,000 acre-feet, but this petition has been protested by Mendocino County and other groups.

This competition for water supply will continue to accelerate as demands for agricultural, urban, and industrial needs in the Redwood Valley-Ukiah-Sanel valleys increase. The Redwood Valley Water Development Project uses Lake Mendocino water to supplement the area's water supply, but no guarantees exist to use this source during drought years. Most of the diversions from the Upper Russian River are for agricultural purposes, according to the California Department of Water Resources (DWR). The DWR has recently concluded in a study of the Basin that deficiencies in the Russian River above the mouth of Dry Creek will occur in dry years by the year 2000, even with emergency urban water demand reductions.

Water Excesses (NOTE: Also see "Safety Element - Flooding)

A) Flood losses can be reduced through better flood plain management planning --

Flooding is a natural and expected event. The major floods of 1955 and 1964 caused considerable damage and loss of life and property in the county. Such losses associated with flooding can be increased by the cumulative effect of obstructions in flood plains; the occupancy of flood hazard areas by uses vulnerable to floods; land use activities which increase surface runoff; and general lack of planning. Despite major state and federal efforts to control floods, flood damages have continued to rise and taxpayers have had to pay for the increased disaster relief. The National Flood Insurance Program make federally subsidized insurance available to citizens in communities that adopt regulations controlling future development of their flood plains. Mendocino County still has the opportunity to prevent disaster and unnecessary expenses in its undeveloped flood plain areas.

B) County flood plain zoning inadequate and incomplete --

Flood plain development regulations are currently expressed in the form of a zoning district overlay entitled "FP" for special flood plain combining district (as adopted in 1956). These regulations



supposedly control the placement of structures within an area of known flooding hazard. Residential buildings are not permitted on ground lower than the flood elevation specified for the district, but exceptions may be granted through the conditional use process. To date, this special flood plain combining district has been minimally applied.

C) Flood hazard areas need to be accurately identified --

The available flood hazard boundary maps prepared for the County by the Federal Insurance Administration (now the Federal Emergency Management Agency) and the Corps of Engineers are based on the 1964 flood level or a hypothetical 100 year flood. Local experience with these maps has shown that some critical flood prone areas were omitted. Detailed mapping, however, is very expensive.

D) Flood control projects do not provide protection --

Despite Coyote Dam, inhabited portions of the Ukiah Valley were flooded in 1964. No flood control project can provide absolute protection. A higher level of protection by such structures against the larger, infrequent floods may not be economically justified. With only partial protection, people may have a false sense of security from the great damage a large flood can cause.

E) Streamside vegetation has flood control benefits --

Greater recognition is being given to the value of riparian vegetation for flood control benefits by both local and state agencies, including the Department of Water Resources, the State's flood control agency. Riparian vegetation helps stabilize streambanks and reduces the velocity of flood waters.

## WATER RESOURCES GOALS AND POLICIES

### WATER QUALITY

#### Goal Number 1

The County shall assure that wastewater disposal from development will not contaminate the ground water or surface water, on either a site-specific or cumulative basis.

#### Policies

- 1a. On-site Wastewater Management Districts shall be required where the concentration of disposal devices warrants them or where the failure of systems is occurring or threatens to be a problem.
- 1b. Promote and support alternative wastewater disposal methods for rural development, which have been accepted by County health officials to be reliable, safe, and legal.
- 1c. Local ordinances shall be made to be compatible with the individual waste treatment policy of the North Coast Regional Water Quality Control Board.

- 1d. Coordinate review of septic tank inspections and construction between Environmental Health, Building and Planning Departments, resulting in single inspection.
- 1e. No division of land or use permit shall be approved without proof that an adequate waste disposal system can be developed or made available for use.

## Goal Number 2

The County shall seek land management practices which will most effectively reduce water pollution.

### Policies

- 2a. Improved soil conservation and erosion control practices by private landowners and managers shall be actively supported by the County through:
  - i. Technical assistance available from the Mendocino County Resource Conservation District, the U.S. Soil Conservation Service, the U.C. Cooperative Extension Service, the Corps of Engineers, and the Russian River Flood Control District.
  - ii. Financial assistance available from state and federal agencies (i.e., California Department of Forestry, U.S. Agricultural Stabilization and Conservation Service). The County shall actively seek necessary funding for this effort.
- 2b. An effective grading ordinance which is complimentary with Chapter 70 of the Uniform Building Code shall be adopted and implemented. Technical guidance shall be requested from agencies with appropriate expertise.
- 2c. Any aerial application of phenoxy herbicides, or any matter containing the chemical Dioxin, is prohibited.
- 2d. Support regular monitoring of pesticides and permitted agricultural chemicals.

## Goal Number 3

The County shall protect ground and surface waters from contamination by industrial wastes, particularly toxic substances.

### Policies

- 3a. No industrial site development with potential for significant water quality impact shall be allowed without the preparation and approval of a complete Environmental Impact Report (EIR).
- 3b. Drinking water supplies near or downstream from industrial sites with potential for water contamination shall be monitored for toxic substances regularly.

## WATER EXCESSES

### GOAL #4

The County shall seek to reduce losses of life and property caused by flooding while protecting the integrity of the flood plain.

### Policies

- 4a. The County Flood Plain Zoning Ordinance shall be revised and implemented to ensure that appropriate flood plain management measures are taken.
- 4b. The flood plain hazard maps of the county, prepared by the Federal Emergency Management Agency, shall serve as the flood-prone area definition for the county and should be improved and updated as supporting technical data and evidence becomes available. Input from local citizens shall be sought.
- 4c. Riparian vegetation shall be protected as a flood plain management technique.
- 4d. Encourage compatible uses of flood plain land, such as for agriculture, forestry, and recreation.

NOTE: Also see "Safety Element" for other policies on flooding

## WATER SUPPLY

### GOAL #5

- a. The County shall strive to make optimum use of its water supplies
- b. The County shall seek dependable water supply, sufficient to meet domestic, agricultural and industrial needs.

### Policies

- 5a. Initiate and support, in conjunction with appropriate state and federal agencies, detailed studies of all groundwater basins in the County to determine more accurate estimates of the location and quantity of the groundwater supplies. Aquifer recharge areas particularly need to be identified.
- 5b. Provide incentives for water conservation practices by all water users by supporting:
  - i. Technical and financial assistance for irrigation management, from such agencies as the Mendocino County Resource Conservation District/Soil Conservation Service, Agricultural Stabilization and Conservation Service, and U.C. Cooperative Extension.
  - ii. Additional research and education on water conservation methods;
  - iii. Appropriate water charges to users by water purveyors.



- iv. Water conservation in the sizing of water supply and waste water treatment facilities.
  - v. Use of water conservation fixtures and drought-resistant landscaping.
- 5c. Encourage the State to revise water rights law to:
- i. Facilitate coordinated management and use of surface and groundwater resources,
  - ii. Reserve adequate stream flows for protection of fish and wildlife habitat and other instream uses.
- 5d. The quantity of water necessary to maintain and enhance agricultural uses shall be determined and positive measures taken to assure this quantity. The Board of Supervisors shall make all efforts to secure all available water from Lake Mendocino for use within the Russian River Basin of the County.
- 5e. Promote the use of wastewater for irrigation, where feasible.
- 5f. Support and promote an accurate inventory of:
- i. Available water, both surface and groundwater,
  - ii. Existing water rights,
  - iii. Current and potential water demand.
- 5g. Cooperate in conducting studies of the effects of flow changes in the Eel River as the result of the recent Potter Valley Project Agreement.
- 5h. No new water diversion shall be allowed that directly or indirectly exports water from within the County to areas outside the County.
- 5i. The County shall encourage the construction of water storage facilities such as water tanks, small reservoirs, and farm ponds for water supply and fire protection.
- 5j. Water development plans shall include mitigation and enhancement features for fish and wildlife.

#### GOAL #6

The County shall assure that development is consistent with the limitations of the local water supply.

#### Policies

- 6a. No development shall be allowed in the County beyond proof of the capability of the available water supply.
- 6b. No division of land or Use Permit shall be approved without proof of an adequate (as defined by the County Environmental Health Division) potable water supply for each parcel being created or proposed for special use.



- 6c. Existing water uses shall have priority over uses for new development. Appropriate planning actions for water resources shall be taken after notification and input from neighborhood residents.

#### Goal Number 7

The County shall maintain the present wild and scenic qualities of the Eel River and its major forks and insure that the Eel River and its major forks remain free flowing and not be dammed.

#### Policies

- 7a. The County shall adopt an ordinance governing the use of the Eel River and guaranteeing protection of its wild and scenic qualities.
- 7b. The County shall actively seek state legislation protecting the Eel River and its major forks.
- 7c. The County shall use any and all means necessary to prevent the flooding of Round Valley.

#### Maps

See County-wide and CAC Area maps for major watershed boundaries, anadromous fish habitat streams ("Biological Resources" map), and flood plain zones ("Hazards" map).



## C. CULTURE AND SERVICES

### 1. Introduction

The cultural and religious diversity of Mendocino County is astounding. Part of the reason for this unusually rich mix of people and ideas is the diverse physical beauty of the County and the relatively mild climate inherent to coastal areas at this latitude. The opportunity for individual and organizational learning, growth, and profit provided by Mendocino County's multi-textured cultural and physical fabric should be preserved. While debate over resource base utilization as well as debate over isolated philosophical dogma can either be uniquely rewarding or extremely polarizing, understanding and profiting from the process of cultural formation and responding to the needs of economic integration must be started and continued in this plan in order to take advantage of what the citizens of Mendocino County perceive as good and require to exist.

Mendocino County's economy can be generally characterized as a primary production economy that is subject to all of the problems inherent to any economy relying heavily upon the exploitation of its natural resource for the production of export commodities. Only very recently has there emerged any type of manufacturing activity which is unrelated to the processing of Mendocino County's output of primary products. In the terminology of economic base theory of regional development, the Mendocino County economy is heavily dependent upon exports of crude and processed primary products for stimulation of local employment, population, and income growth. In fact, at least 30 percent of the total employment in Mendocino County is directly dependent upon the agriculture, forestry, fishing industry, and the lumber and wood processing and food processing sectors of the manufacturing industry.

Mendocino County's economy is one classically associated with primary production economics everywhere: cyclical instability, seasonality, relatively high unemployment rates, and slow growth patterns. Historically, cyclical instability has been a function of changes in the national demand for lumber, and log production in Mendocino County has fluctuated accordingly, hitting a low of 33 million board feet per year production during the early 1930's and peaking at one billion board feet in 1955 during the postwar building boom. Since the 50's, however, the depletion of available supplies of privately owned old growth timber and a consolidation-diversification trend within the local lumber wood products industry have become as important as regulators of timber production and economic activity, as has been the national housing market. Payroll fluctuations associated with the timber industry's production cycles are expected to stabilize, in relative terms, as large nationally integrated forest products corporations such as Georgia Pacific, Louisiana Pacific, and Masonite, operating on wide profit margins, have acquired control of most of the commercial timber resources and processing

facilities in the County. The recent establishment of several large plants which utilize the by-products of lumbering and of manufacturing enterprises unrelated to the wood products industry will probably also contribute somewhat to a greater measure of economic stability.

Mendocino County's high unemployment is, in part, attributable to the seasonal nature of production in the area's basic industries with unemployment rates generally fluctuating in accord with the weather patterns which affect logging activity, agricultural activity, and tourism. Generally, economic activity in the above mentioned industries begins to rise in late spring as orchard pruning and vineyard pre-harvest activities boost agricultural payrolls and as logging and tourism commences. Employment peaks in July, August, or September as harvesting activities, summer tourism and recreation, and logging and sawmill operations expand agricultural, manufacturing, trade, and service payrolls. During the winter months, the weather generally prohibits both construction and logging activity and unemployment peaks with a surplus of workers in nearly all occupations. However, both seasonal and annual average declines in total civilian employment are partially stabilized in all cases by an offsetting decline in the civilian labor force indicating the existence of a fairly sizable degree of underemployment concentrating among the economic groups of housewives, youths, and older workers.

It is important that there be some understanding of the nature of the timber products industry in order that the links to the national economy fluctuations can be more properly understood. A partial description of why certain industries locate in certain areas is supplied by the term "value added". Value added means the process or action added to the raw material. This value adding may occur all at one location or may occur incrementally from the harvest point to market place. For the purpose of this plan, the value added characteristic of timber is defined as those processes and actions necessary to harvest and mill. Although considerable value is added to a tree through proper live tree management, the management variables are many and the use of any unit constant figures with regard to live management can be complex and misleading. About one fourth of the value of the timber products are added by the time the log reaches the mill. This relatively low value added characteristic means that the total processing must occur as close to the harvest point as possible because early consolidation of bulk and weight is critical to successful profit taking. A competitive pressure developed in part by the harvest phase low value added characteristic is seen in the increased automation of the industry and the continued research for opportunities to reduce waste both in the forest and at the mill. As the market pressures increase, so will operational consolidation and operational integrations increase. The fact that the timber industry as a whole is extremely sensitive to the minor fluctuations in the national



and international economies, adds emphasis to the fact that total tree management and use is becoming increasingly necessary for successful product competition. For example, if Japan can buy raw timber in the United States and Canada, ship this product home to be processed and come out ahead, their product research and development is better than ours or their market is much less competitive, or both. Although low market competition is a primary factor in Japan, successful product research and development must increase as a feature of our timber marketing techniques in the United States if we intend to compete successfully with international technology. The pressure of the international market will increase dramatically as expanded world population demands more of the total resource pie.

Agriculture, including fishing in Mendocino County results in a gross value nearing 40 million dollars as opposed to the 140 million dollars value created in the lumber industry.

Agriculture is an occupation that, in the absence of Federal price support, is a large gamble. Weather is a variable that has a lot to do with crop availability and quality. The universal supply and demand theory has many times been brutally demonstrated in the agricultural business because of the violent fluctuations in the market place and weather. Although weather and market are very large factors affecting the success of agriculture, part of the market fluctuation problem is the historic individualism of the farmer and his resistance to collective action. A greater grower control of the market and a greater grower control of the environment will do much to stabilize the market prices and reduce widely fluctuating demands and the general inflationary trends. Value added characteristics in the agricultural market place are very difficult to determine as a percentage of the total value because the total value often fluctuates more than one hundred percent in a six month period.

Spiraling land prices and diminishing arable land availability will, however, at some point begin to limit both animal and crop production. The market will begin to stabilize because the demand will be at least as much as the farmer can produce. In a world of steadily increasing population, producer's co-ops should be able, in this prediction, to anticipate the market and anticipate production by utilizing advance crop and production techniques. Another area for local value adding opportunities would be to create interim-processing centers for some of the crops that will begin to be raised on a regional basis. Interim-processed of wine and pears does happen and even final processing in many cases occurs in Mendocino County. Even greater processing of the local raw products should be emphasized. The opportunity for processing truck crops and extending the growth season of truck cropping has not occurred here primarily because the cost of transporting the truck crops from outside of this area to Mendocino County have not yet become prohibitive. Truck farming may become important if energy limitations restrict transport. Some opportunity does

exist in the livestock business for processing which would include slaughterhouses, tallow works, hide processors, etc.

## TRENDS

After two years of expansion, the employment growth rate in Mendocino County slowed below the State rate in 1978.

	<u>1978</u>	<u>1979</u>	<u>1980</u>
Civilian labor force <u>1/</u>	28,700	29,175	29,650
Employment	26,075	26,400	26,950
Unemployment	2,625	2,775	2,700
Unemployment rate	9.2	9.5	9.1

1/ Labor force by place of residence. Employment includes persons involved in labor-management trade disputes. 1979 and 1980 figures are forecast.\*(1)

In both 1977 and 1978, payrolls in retail trade recorded the largest annual increase of any industry division because of the opening of two shopping centers in 1977, followed by their expansion in 1978. Retail trade will continue to gain more jobs during the forecast period than any other industry division. However, the annual growth rate for employment will fall considerably below that of the previous two years because the restaurants and stores scheduled to open in 1979 and 1980 are on a much smaller scale than those opened in the previous two years.\*(2)

Services posted the second largest absolute gain in employment during 1977 and 1978. Nonprofit agencies, operating expanded government-funded employment programs, contributed significantly to the job gains as did medical services responding to the demands of a growing population. Meanwhile, hotels and motels added workers to handle the growing tourist business. In 1979, however, the total of private sector services payrolls will decline as the transfer of a nonprofit agency's CETA-funded job programs to county personnel rosters will not be offset by scattered job gains in other industry components of this division. By 1980, the number working for services businesses will again rise because of expanded medical facilities and increased hotel and motel business.\*(2)

Lumber and wood products will continue to dominate Mendocino County's manufacturing division. In 1977 payrolls rose as lumber-related business expanded to meet the increased national demand for building materials. However, in 1978, lumber industry employment declined slightly because some sawmills trimmed pay rosters, and logging was curtailed by a wet winter after the longer-than usual logging season of the two drought years. During 1979 and 1980, lumber payrolls receded further

in response to the decline in national construction activity due to the extremely high interest rates.\*<sup>(2)</sup>

Until recently, government payrolls have grown at the local level in response to the demands of an expanding population. Then in mid-1978, the passage of the Jarvis-Gann initiative curtailed funding of local government activities and Mendocino County personnel rosters were trimmed. However, the shift of some CETA-funded job programs to county personnel rosters from a nonprofit agency's employment rolls will boost the number working for the county in 1979. Otherwise, the level of public sector payrolls remained unchanged during 1979 and 1980.\*<sup>(2)</sup>

Construction employment reached record levels during 1978 due to a residential building boom. However, construction work declined in 1979 and 1980 due primarily to higher interest rates for building and contractor uncertainty about the freeze on new subdivisions in Mendocino County.\*<sup>(2)</sup>

#### Needs for "New Industry"

The mining of non-ferrous metals and lumber and timber basic products is "highly sensitive" to the national economy.\*<sup>(3)</sup> Industries and services such as: computer manufacture and use, food and kindred products, printing and publishing, recreation and high skill or craftsman trades are some new business which should be encouraged to locate here, because these industries and services are not as sensitive to national economic fluctuation.

The problem with locating these types of business is that we do not have a labor pool skilled in these areas. A program for retaining local workers and providing housing for new people will be required, if such business is to be encouraged to locate here.

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\*<sup>(1)</sup> "Mendocino County Labor Market Newsletter", March 1979, California Employment Development Department.

\*<sup>(2)</sup> The Economy of Mendocino County, Bank of America, Economics Department, April, 1973, p.14-17.

\*<sup>(3)</sup> Chapin, S., Urban Land Use Planning, University of Illinois Press, 1970.





## 2. ARCHAEOLOGICAL RESOURCES

### "Purpose of Findings"

"The Board of Supervisors of the County of Mendocino hereby finds and declares that there exist in the County of Mendocino, areas of great importance for the study of the past of the native Indian of California, hereinafter referred to as 'Native American', and said areas hereinafter referred to as 'Native American archaeological sites', and that such sites are unique, irreplaceable phenomena of significance in the history of the County and in the understanding of the cultural heritage of our land and of all humankind; that the character of such sites has attracted and can attract visitors and scientific interest to the County, thereby augmenting the economy and general welfare of the County and its residents; that such sites constitute a precious archaeological, paleontological, and historical heritage which is fast disappearing as a result of public and private land development and other undertakings of land modification, and as a result of excessive and uncontrolled excavations for Native American artifacts; that the total efforts of government to preserve and salvage these sites and resources is fragmented and uncoordinated; that the preservation and enhancement of these sites is essential to the economic and cultural life of the County; and that, in order to promote the public welfare, it is necessary to provide regulations for the protection, enhancement, and perpetuation of such sites." (Ord. No. 1681, adopted 1976).

The above policy statement is Section 22.12.010 of the Mendocino County Code. It is the preamble to the "Native American Archaeological Sites" chapter of the code which sets up an Archaeological Commission for the County. The charge of this commission is to review "projects", as defined by CEQA, for archaeological impact, and to develop mitigation where impact exists. Through the archaeological chapter of the code, Mendocino County has articulated policy and established an implementation strategy for archaeological resources.

Through the operation of the Commission, there has been a significant reduction of archaeological site disturbances. However, such incidents do still occur and means by which they may be prevented are desired. Additionally, the process for project review through the Commission is sometimes lengthy and duplicative of other County agency review. Means to make archaeological permit review speedier and more efficient is also desired. The Archaeological Commission is presently studying a grant application to examine ways in which more reliable and efficient archaeological decisions can be made. The following policies are offered as a reflection of archaeological direction derived from the county code:

## GOAL

Provide for the protection, enhancement and perpetuation of significant Native American archaeological sites.

## Policies

- I 1. Maintain Chapter 22.12 of the Mendocino County Code as an effective and desirable way in which archaeological resources are protected.
- I 2. Review on-going incidents of archaeological site disturbance and determine causes of same.
- I 3. Develop ways in which site disturbance can be eliminated, such as redefinition of Archaeological Commission jurisdiction to include non-CEQA projects, or other means.
- I 4. Develop a more reliable archaeological resources information base which can lead to reduction of paperwork and permit review.
- 5. Research more efficient processes and inter-agency cooperation as ways in which to reduce delay and make better decisions.
- 6. Develop grant proposals for Board of Supervisors review to accomplish above.

## 3. HISTORICAL RESOURCES

Mendocino County has established a Historical Preservation District for the Town of Mendocino through Article 42 of the County Code. This is the only place where specific historical preservation implementation has been developed. There have been several problems identified in the operation of the Mendocino Historical Review Board, but since Mendocino is in the Coastal Zone, specific recommendations for planning policy in that area are left to the Local Coastal Plan process. In other historical resource protection areas, the Mendocino County Museum has been the central agency for review and recommendation. Historic sites in the County which are officially listed either on the National Register of Historic Sites or the California State Landmarks Register which are identified in Appendix 4.

## GOAL

Provide for the protection and enhancement of the County's significant historical resources.

## Policies

- I 1. Designate the Mendocino County Museum as a Lead Agency for development of Historical policy as well as for technical advice on specific historical sites.
- 2. Coordinate historical policy with Mendocino County Historical Society and Archaeological Commission direction.

3. Investigate grants to encourage and promote historical resource conservation.
4. Research methods in which historical resources can be inventoried, and conserved by reducing land use conflict within the site region.
5. Significant historical sites shall be protected. Mendocino County shall encourage preservation of its rich architectural heritage by adoption of the State Historic Building Code and utilization of the Marks Historical Rehabilitation Act of 1976 (Section 37600, Health and Safety Code).
6. Inventory the significant historical resources of the County through volunteer assistance and the County museum.





#### 4. PUBLIC SERVICES

##### a. Introduction

The primary function of local government are two: the provision of essential public services and facilities, and the protection of persons and property in the interest of public health, safety and general welfare. Several different systems have evolved to accomplish these two governmental tasks.

The most readily apparent is the County governmental structure as established under State Law directed by the five elected County Supervisors and funded to a limited extent by county property taxes. The administrative function of local government under the Board of Supervisors is to oversee and coordinate the various government departments and public agencies which provide services under the functional groupings of General Government, Health and Sanitation, Public Assistance, Public Protection, Recreation and Culture, Public Works and Facilities and Education. The development and adoption of regulatory local ordinances is also a legislative function of local government. The Board of Supervisors is both the legislative and administrative arm of local government and is assisted by the Administrative Officer who acts as their agent in ensuring that legislative policies of the Board are carried out by the administrative branches of County government.

Some of the administrative agencies are headed by elected officials such as the Assessor, Auditor, Sheriff/Coroner, District Attorney, and Treasurer/Tax Collector who have responsibility under State Law, but are responsible to the Board of Supervisors for budgetary and other administrative services and are part of the general county governmental system.

Less obvious, but no less important are the multitude of special districts that have been established throughout the county to provide specific services within the district boundaries. Special districts traditionally provide fire protection, water treatment and distribution, and sewage collection and treatment. Other services that may be provided by special districts include street lighting, flood control, cemeteries, ambulance service, harbor improvement, septic tank maintenance, and subdivision management and improvement. Special districts are created in order that provision of services can be tailored to a specific need and to the service users' ability to pay for the services provided. Special districts may be governed by the County Board of Supervisors or by an elected Board of Directors for the district.

Privately owned utilities also provide services to the public, operating partly as private businesses and partly as public agencies. Utilities are supervised by government and may provide water, telephone, electricity, cable TV, solid waste collection, and gas.

The revenue necessary for the public provision of services naturally is raised through taxation, user fees, and sale of bonds. Local property taxes contributed approximately 15% of the 28 million dollars in revenue collected by the County in fiscal year 1978-1979. Subventions from other governmental agencies, derived primarily from state and federal income taxes, accounted for 60% of the revenues, while the remaining 25% was supplied from other sources such as sales taxes, charges for services, and fund balances. The above figures do not include schools or special districts. Schools are funded by both property taxes and state and federal subventions while special districts, which prior to Proposition 13 were able to determine revenues by adjusting the district tax rate, are now dependent upon a severely reduced share of property tax money, plus state subventions distributed by the county and any money the districts can raise on their own.

The fiscal limitations imposed upon local governments and special districts by Proposition 13, and Proposition 4, the "Spirit of 13", makes it imperative that governments thoroughly examine proposed plans' potential fiscal impacts. In order that the costs of providing services may be assessed it is equally important to understand the service delivery capabilities of the local government, the schools, the special districts and other purveyors of services. A summary of the expansion capacity of government agencies, special districts and utilities is the subject of the following section. A survey of special districts conducted by the Planning Department during the summer of 1979 is the source of most of the following information.

### Public Services General Goals and Policies

#### GOAL #1

Provide for the health, safety and welfare of county residents through the provision of adequate public services and infrastructure to support existing and planned levels of development in the county.

#### Policies

- 1a. Allocate the costs of the public services equitably among present and future residents and others who benefit.

- I
  - 1b. Annually review public services capabilities and limitations and determine improvement programs or other measures necessary to rectify deficiencies.
  - 1c. Future service districts annexations shall be consistent with spheres of influence adopted by LAFCO.

## GOAL #2

Ensure cooperation among the various jurisdictions responsible for supplying services in the county.

## Policy

- I
  - 2a. Review and recommend revision of service district boundaries to achieve consistency with the revised General Plan.

### b. Fire Protection

In Mendocino County, fire protection is provided by twenty-one fire districts and volunteer organizations, the California Department of Forestry and the U.S. Forest Service. Additionally, large industrial plants such as Masonite in Ukiah and the Georgia Pacific mill in Fort Bragg maintain fire suppression equipment primarily for their own use. Assistance with inspections and arson investigations is available from the office of State Fire Marshall.

A measure of the level of service available in various areas of the county is indicated by the Insurance Services Office ratings prepared for use by insurance companies. Communities are graded on a scale of one through ten, one indicating the highest level of protection, ten the lowest. 39% of the rating is based on the availability of water, 39% on the operational capability of the fire department, 9% on the emergency communications system, and 13% on other factors such as code enforcement and climatological conditions. Fire insurance agencies use the ratings to establish insurance rates within the community. Consequently communities that maintain a higher level of fire service enjoy lower insurance rates.

Fire ratings in Mendocino County range from three and five in Ukiah depending upon proximity to the fire stations, and six in Willits and Fort Bragg, to eight or nine in most of the other communities. A few communities such as Comptche, Piercy and Elk have not been rated.

Non-county public agencies providing fire service within the County are the California Department of Forestry and the U.S. Forest Service. The Forest Service area of responsibility is the 174,000 acres of National Forest located in the northeast portion of the county. The Forest Service maintains lookout stations and fire crews during

the summer fire season (May 15 to October 15). Although the Forest Service is primarily concerned with wildfires in the National Forest, they do respond to structural fires, and they do participate in mutual aid agreements with other fire agencies when crews and equipment are available. Mendocino County falls within two ranger districts, headquartered at Upper Lake and Covelo.

The California Department of Forestry (CDF) has responsibility for wildfires in the remainder of the county not covered by the Forest Service, and by contract and mutual aid agreements, has responsibility for some structural fires. Like the Forest Service, CDF is fully staffed only during the summer months, and consequently is least able to respond during the winter when the likelihood of structural fires is greater.

Community volunteer fire departments bear the major responsibility for fighting structural fires in the county, and because of their locations in populated areas, for providing the initial response to many grass and brush fires as well. Community fire departments rely heavily upon volunteer fire fighters, having few or no paid employees.

Of the 21 fire departments serving the county, 14 were tax districts, prior to Proposition 13 able to obtain revenues by setting their own district tax rates. Proposition 13 cut the amount of tax revenue available to special districts in half, with limited additional revenue available from state bail-out funds, revenue sharing and community fundraising efforts making up some of the difference. The impacts of Proposition 4, just approved, are unknown.

Most of the fire departments within the county are presently capable of adequately serving the existing level of demand for fire suppression and rescue. The exceptions are Covelo, Greenwood Ridge, Leggett, Little Lake, Piercy, Potter Valley, and Redwood Valley-Calpella, all of which list equipment inadequacies as the limiting factor to providing a higher level of service.

#### Fire Protection Goals and Policies

##### I GOAL #1

New development proposals shall have a letter from appropriate fire protection agency that adequate fire protection can be provided.

##### Policies

- 1a. Require new development to pay its full fair share of improvements required.



- I 1b. Require that all new developments provide access, water supplies, fire or fuelbreaks or other provisions deemed necessary.
- I 1c. In coordination with fire protection agencies develop any additional standards deemed necessary beyond those listed in the Safety Element.

c. Water Supply

There are approximately 45 purveyors of water in Mendocino County, 14 of which are county or city water districts. Of the remainder, two are California water districts, while the other private water companies, most of which are formed to serve specific land development projects.

The number of water meters served per agency ranges from highs of 800-900 for the Millview and Willow districts to lows of less than 30 for Albion, Pacific Reefs, and Little River. Fort Bragg Municipal Improvement District, Ukiah City Water and P.G.&E. (Willits) serve 2038, 3293 in (1970), and 1796 customers respectively, including customers both within the outside the city limits. Many of the smaller private water companies have little or no capacity to serve additional development. Of the county districts several also have limitations. Calpella County Water District pumps and water lines are in need of repair or replacement, and storage capacity needs to be increased, to enable the district to deliver water to additional customers. Redwood Valley County Water District is completing construction of its system and anticipates delivery of water for domestic use by mid November, 1979. The district obtains water from Lake Mendocino through an agreement with the Mendocino County Russian River Flood Control and Water Conservation Improvement District, however, the agreement limits Redwood Valley to surplus water, which may not exist during dry years. Westport County Water District is involved in litigation with the contractor who built the system, and tests of the water supplied by the district have indicated contamination with low concentrations of phenol, a potential carcinogen.

The County Health Department licenses mutual (private) water companies annually, while water districts are licensed for longer unspecified terms. Water agencies serving over 200 connections require a state permit. The Health Department monitors the quality of water being provided by all water agencies through periodic sampling.

Mutual water companies are financed either through cost sharing by the water users or by connection fees and sale of water. Some districts also obtain all their revenue from fees and water sales, while others receive tax monies as well.



Water Supply  
Goal and Policies

GOAL

No new development shall be allowed to occur within the service area of a water purveyor unless an adequate quantity of water, as defined by the County Health Department, will be available.

Policies

I

- 1a. Commitments from service districts for water services shall be required prior to project tentative approval.
- 1b. Encourage the conservation and reuse of water whenever feasible.
- 1c. Protect and preserve water districts' sources of supply when considering uses of land which may adversely impact water quality or availability.
- 1d. Require new development to pay its full fair share of water system improvements required.

d. Sewage Treatment

Sewage collection and treatment within Mendocino County is provided by 14 districts operating 10 sewage treatment plants. Sewage collected within the Brooktrails and Meadowbrook Manor Districts is treated at the City of Willits plant, while the City of Ukiah plant handles sewage from the Lewis and Ukiah Valley Sanitation Districts. Sewage disposal in the remainder of the county is handled by private onsite facilities--- primarily septic tank and leach field systems.

Sewage districts vary in their ability to accommodate additional growth. Fort Bragg is presently operating at approximately one third capacity while Calpella is undergoing major improvements in order to meet water quality standards with the district's present number of connections. Sewage districts having known capacity to serve new customers are Covelo Community Service District, Fort Bragg Municipal Improvement District, Willits and Point Arena, but accurate figures for actual remaining capacity are not yet determined.

Sewage Treatment  
Goal and Policies

GOAL

No new developments shall be allowed to occur within a sewer district unless adequate sewage treatment capacity, as defined by the responsible health agency, can be provided.

## Policies

- I 1a. Projects proposed within sewer service districts shall receive sewer commitments from the district prior to receiving tentative approval.
- 1b. Anticipate the eventual need for sewage collection and treatment service in areas classified as Rural Community and Suburban Residential.
- 1c. Require new development to pay its full fair share of sewer system improvements.
- I 1d. Permits for new installations of septic tanks shall not be issued in the absence of a long term arrangement for septage disposal.

### e. Police

Law enforcement in Mendocino County is provided primarily by the County Sheriff's Department, the Fort Bragg, Ukiah, and Willits City Police Departments, and the California Highway Patrol. The California Department of Parks and Recreation, the Corps of Engineers, the Bureau of Land Management and the California Department of Fish and Game enforce specific regulations on lands within their respective jurisdictions, while additional security services are offered by three private guard and patrol agencies in the county.

The County Sheriff is responsible for the enforcement of state laws and county ordinances, crime prevention and apprehension of criminals in the unincorporated areas of the county, and by contract, within the City of Point Arena. The sheriff also operates the county's jail facilities, assists with various court functions, and performs coroner investigations. The sheriff operates with a staff of approximately 90 persons, 50 of which are deputy sheriffs (patrolmen), on a budget (1978-1979) of \$1,767,363. The department estimates it will have performed 2300 criminal investigations in 1978-1979, and will have driven 1,200,000 miles. In addition to facilities in Ukiah, the Sheriff's department maintains sub-stations in Willits, and Fort Bragg, and resident deputies in Boonville, Covelo, Gualala, Laytonville, Leggett, Philo and Point Arena.

The Ukiah Police Department employs 26 persons, 13 of which are patrolmen. The department responded to 2749 reported offenses in 1978, made 1267 arrests (including juvenile detentions), and logged 148,535 patrol miles. The Department's 1978-1979 budget was \$811,043. Over half the reported felony offenses were burglary, grand theft or auto theft; while drunks, fictitious checks, petty theft and vandalism accounted for more than half of the reported misdemeanor offenses. The Department Annual Report for 1978 indicates significant increases in fictitious checks, forgery and robbery, which can, in part, be attributed to new shopping centers.



In Fort Bragg the Police Department, in addition to providing general law enforcement, also operates the Volunteer Fire Department, provided animal control and disaster services, and provides fire dispatching services for the Mendocino Westport, Comptche and Albion Fire Departments. The department employs 17 persons, 8 of which are patrolmen; and had a budget 1978-1979 of \$309,819 for general law enforcement (not including fire, animal control or disaster service). The department responded to 756 reported offenses and made 452 arrests (including juvenile detentions). Burglary, grand theft, and auto theft were the predominant felonies in 1978, (123 of the 177 reported felonies), while reports of drunks, petty thefts, malicious mischief, and bad checks accounted for 442 of the 579 reported misdemeanors.

The City of Willits Police Department has 17 employees, including 8 patrolmen, and provides fire dispatching service as well as law enforcement. The department's budget for 1978-1979 was \$361,045. The department responded to 1174 reported offenses during 1978 and made 578 arrests. Burglary and ssult were the most common felonies while public intoxication, petty theft and drunk driving were the major misdemeanors. Two thousand one hundred twenty citations were issued.

Mendocino County falls within the jurisdiction of two California Highway Patrol offices, Ukiah and Garberville, and is further subdivided by the CHP's resident officer program. Under the Ukiah office there are resident officers in Willits, Fort Bragg and Point Arena. The Garberville office maintains a resident officer in Laytonville. The CHP is primarily responsible for enforcement of the state vehicle code in the unincorporated areas of the county, and patrol schedules are designed to focus attention on the most highly traveled routes in the county. Notwithstanding, enforcement is also provided within city boundaries when infractions are observed. In recent years the number of patrolmen on the force has diminished, due to decreased state budgeting, resulting in either reduced patrol activity or an assumption of the responsibility by the Sherrif's Department.

f. Solid Waste

Management of solid waste in Mendocino County is governed by the County of Mendocino Solid Waste Management Plan prepared by the Department of Public Works and adopted by the Board of Supervisors in 1977. The following information has been drawn from the County's Solid Waste Management Plan of that date.

Landfills are the predominant method of solid waste disposal in Mendocino County. There are five municipal

landfills and seven industrial landfills (wood waste) currently being operated. There is also one private domestic landfill.

The five municipal landfills are located in Laytonville, in the South Coast area on Fish Rock Road, in Ukiah, Willits and Caspar.

The Laytonville landfill is owned and operated by the County. The five acre fill area receives approximately 720 tons of waste per year, and costs about \$22.00 per ton to operate. Although expansion of the landfill is restricted by the Regional Water Quality Control Board, the site is estimated to have a 20 year life.

The South Coast landfill is owned and operated by the County and by contract serves the City of Point Arena as well as the South Coast Area of the County. The ten acre fill area receives approximately 1,300 tons of waste per year, and costs about \$22.00 per ton to operate.

The Ukiah landfill is owned and operated by the City of Ukiah. The site receives approximately 14,000 tons of waste per year, has an expected life in excess of 25 years, and costs about \$10.00 per ton to operate.

The Willits landfill is owned jointly by the City of Willits and the County, and is operated by the City of Willits. Approximately 3,000 tons per year are disposed at the site at a cost of about \$13.00 per ton. The expected life of the site is in excess of 20 years.

The Caspar landfill is jointly owned by the City of Fort Bragg and the County, and is operated by a private operator under contract with the City. An estimated 12,000 tons of waste per year are deposited at the site at an approximate cost of \$10.00 per ton. The life of the site is estimated to be 10 to 15 years, longer if groundwater contamination problems can be overcome.

The private landfill is owned and operated by the Church of the Golden Rule in Walker Valley and serves only the church community.

The industrial landfills are all owned and operated by timber companies and are used for the disposal of wood wastes that were historically burned in tepee burners. Approximately 142,000 tons of wood waste are disposed of annually by the lumber mills.

Supplementing the landfill disposal sites are six county-operated transfer stations located in Albion, Boonville, Covelo, Leggett, Navarro, and Potter Valley. Refuse is deposited in containers at the transfer stations and

trucked to either the Caspar or Ukiah landfills. Approximately 3,000 tons per year are handled through the transfer stations. Plans for an additional transfer station in Westport were shelved following approval of Proposition 13. For a more thorough discussion of solid waste management in Mendocino County, the reader is referred to the Solid Waste Management Plan and its EIR.

Sanitary landfills, transfer stations and woodwaste disposal sites are shown on the general plan land use map.

The Solid Waste Management Plan lists the following objectives regarding the management of solid waste in the county:

#### OVERALL:

In addition to being the framework for solid waste management decisions through the planning period, this plan attempts to develop policies and implementing actions that will:

1. Protect the public health and safety,
2. Protect the environment and conserve resources and energy,
3. Match the need for solid waste management programs with available financial resources consistent with the public's ability to pay for these programs,
4. Incorporate modern technologies and processes into the region's solid waste systems where feasible (available and cost-effective),
5. Provide for the necessary flexibility to adapt to developing technologies and changing conditions,
6. Provide for the safe handling of hazardous wastes,
7. Provide for contingencies so that solid waste management may be accomplished during disasters, energy shortages, etc., with a minimum health hazard and inconvenience to the public, and
8. Ensure an on-going solid waste management planning process that involves the public.

#### SHORT TERM:

- I 1. To gather the information (quantities, uses, disposal practices, etc.) on solid wastes necessary for making decisions affecting waste systems within the County and amending the Solid Waste Management Plan.

- I 2. To finalize the procedures for handling and disposing of hazardous materials and spills.
- I 3. To improve collection service to the public by examining existing service areas and incorporating changes (if needed) into the Solid Waste Management Plan.
- 4. To determine the feasibility of expanded resource recovery programs in the Mendocino County region.
- I 5. To establish and maintain collection, transfer and disposal systems compatible with future regional resource recovery programs.
- 6. To determine the future ownership and operating mode of all major municipal solid waste disposal facilities.
- 7. To determine the need\* for additional disposal sites in remote areas of the County and to schedule construction at those sites where the need is established.
- I 8. To ensure that the present/future industrial solid and hazardous waste disposal facilities are maintained/established according to law in an environmentally acceptable manner.
- 9. To improve existing solid waste facilities to ensure their longevity and environmental acceptability.

MEDIUM TERM:

- I 1. To implement expanded resource recovery programs in the Mendocino County region, if such programs have been shown to be feasible in the short term.
- 2. To modify collection, transfer and disposal systems as necessary to efficiently utilize regional resources recovery programs.
- 3. To determine the need for additional disposal sites in remote areas of the County and to construct those sites where the need is established.
- I 4. To ensure that the present/future industrial solid and hazardous waste disposal facilities are maintained/established according to law in an environmentally acceptable manner.
- 5. To improve existing solid waste facilities to ensure their longevity and environmental acceptability.

\*"Need" includes the public's ability to pay for these sites as determined by the County Board of Supervisors.



#### LONG TERM:

1. To implement expanded resource recovery programs in the Mendocino County region, if such programs have been shown to be feasible in the short or medium term.
2. To modify collection, transfer and disposal systems as necessary to efficiently utilize regional resource recovery programs.
3. To ensure that the present/future industrial solid and hazardous waste disposal facilities are maintained/established according to law in an environmentally acceptable manner.
4. To improve existing solid waste facilities to ensure their longevity and environmental acceptability.

#### **g. Hazardous Waste.**

Management of hazardous waste in Mendocino County is governed by the Mendocino County Hazardous Waste Management Plan (CHWMP or Plan) that was prepared by the County Division of Environmental Health and approved by the Board of Supervisors in February, 1990, as it may be amended and approved by the Board of Supervisors from time to time.

The purpose of the Plan is to provide the policy and planning framework necessary to protect public health and safety and the environment from problems caused by the improper management of hazardous wastes. This Plan details coordinating mechanisms for a variety of existing waste management efforts and details recommendations for ongoing implementation programs necessary to assure that adequate hazardous waste management will be available in the future.

Specific goals and policies and measures for a county wide approach to the management of hazardous waste are defined and outlined in the County Hazardous Waste Management Plan which is incorporated into the General Plan by this reference.



## 5. RESIDENTIAL

Where people live, of course, is the most important determination of any land use plan. Residential development has been determined to be the priority recipient of most utility service systems. In other words, where the choice is between water or electricity being delivered to commerce, to industry, or to the residential user, the legislature of the State of California has determined that residential users shall have priority. It is therefore incumbent upon land use planners and citizens who advise land use planners, to make a substantial effort on the determinations needed in making environmentally efficient and service cost efficient land use decisions. Residential land use and the problems surrounding the location and affordability of housing are emphasized by the requirement for a Housing Element, a major element of the General Plan. The Housing Element is contained in this document in a separate section.

The discussion of residential land use is separated into topics primarily by the determination of density and intensity of this use. Of course, as the density and intensity of use increases, the potential conflict between people and the uses to which the surrounding land is put is a major consideration. For example, in a highly urbanized setting where residential development exceeds twenty units per acre, the attention to vehicular and pedestrian access must be adequate to serve anticipated demand. In other words, people must be able to easily reach their residence without long traffic delays. Further commercial and industrial locations must be very closely reviewed when located in close proximity to high density housing because the potential for impact of commercial and industrial location on living space is much greater when there are more people per acre to impact. As residential densities decline, the relative need for sophistication of access and environmental control declines to the degree that the number of people affected is reduced. This does not mean, however, that if there is only one family per twenty acres of ground that the plan may disobligate itself from concern about the quality of life available to that family.

The major problem regarding the location of residential uses in an agricultural county is the conflict that exists between the conduct of agriculture, plowing, seeding, spraying and harvesting. Many times residential locations result in restrictions being placed upon agriculture that make agriculture a noneconomic occupation. Therefore major attention must be paid to the potential conflicts between people and the raising of food and fiber. One of the best ways to maintain an adequate separation between farms and residential uses is to separate these two uses by natural and manmade barriers. Such barriers include rivers, major freeways, major collector thoroughfares, parks and other kinds of low intensity uses such as distributive warehouse facilities.

Residential land use also represents a high proportion of the demand for the services routinely supplied by general purpose

government or special districts. Residential uses require independent access, require private or public water systems, require private or public sewerage systems, require some method for disposing of solid wastes, and to a large degree require that there be access provided to the public schools. The aspects of public service as it relates to the ability of government to supply that service, is a critical factor in determining where land should be used for residential purposes. Since it is very clearly the responsibility of government to provide for the opportunity for the maintenance of basic life support systems on a residential lot, the locational aspects of residential land must be studied and planned to provide for the most efficient public service delivery systems. An example of problems that can arise even though disposal of liquid waste is handled through individual septage, is exhibited by the fact that the county is presently in an emergency situation regarding the location of a disposal site for septic systems cleanout waste. Therefore, the fact that there are onsite systems does not disobliterate the public agency from providing solutions to developing problems. These solutions, of course, cost money, and this money must come for the taxpayer.



## 6. COMMERCE

There are several definitions or general categories for commercial use. These use categories range from urban neighborhood commercial, to urban regional commercial, to urban central core commercial and then to the rural community center area and rural site specific commercial, or isolated commerce.

The need for commercial land is a very flexible requirement. Generally, planning textbooks suggest that approximately 2% of the urban/suburban area be allocated for commercial purposes. This 2% figure, however, to a large degree, depends upon the service areas that the commercial uses must serve.

Basically, commercial uses are separated into impulse buying areas where the shopper is drawn between two major commercial establishments, through small specialty shops. This kind of impulse buying is emphasized in regional shopping centers and core commercial areas. People come to these areas with a few specific items in mind for purchase feeling that they will browse in the specialty shops and maybe purchase a few things that catch their eye. The primary locational requirement of regional and core commercial is access and parking. These heavily used commercial areas must have good road systems connecting them to the area for service and have adequate parking to accommodate the maximum number of users anticipated on any given day.

In rural isolated areas of the county, limited commerce activities have developed to meet the local demand for services and supplies. In some cases the activities are more related to the development of natural resources such as timber, agriculture or mining activities and provide additional rural employment opportunities as well as commercial commodities.

Another kind of commercial use is primarily automobile related. These automobile related uses include lumber and plumbing stores, automobile related stores, part houses, service stations, etc. and laundry and liquor stores. The emphasis of automobile related commercial facilities is quick in and out access or easy access when large objects are to be transferred from the commercial establishment to the vehicle.

Historically, commercial uses have been viewed as compatible with high density residential land uses. The reasons for this has been the transportation network to support commercial establishments is the same kind of transportation network that is required for high density residential.

With the advent of the California Environmental Quality Act, environmental studies done of commercial compatibility with all kinds of residential use indicate a low compatibility factor between residential and commercial uses. The reasons for these low compatibility factors is that the pedestrian/vehicular traffic generated from commercial operations creates noise,

odor and an intensity of use that result in friction between the commercial and the residents. The kinds of buffers that should exist between commercial and residential development are essentially the same kind of buffers that should exist between residential, commercial and heavy industrial development. Orientation can do a lot to diffuse friction between land uses. An example of this would be that the commercial would back to the rear yards of residential uses and that these backyards would be separated by an alleyway and a solid masonry wall.

In looking at the land use proposals developed in the various CAC areas, the issues raised in the above discussion were used to minimize conflicts between commercial and residential land use.

#### Issues

1. Appropriate locations for commercial uses.
2. Amount of land appropriate for commercial designation.
3. Impacts associated with commercial uses - i.e., traffic, signs, noise.
4. Benefits to the community deriving from increased commercial development.
5. Amount of review and regulation necessary.
6. Growth inducing impacts of commercial development.
7. Extent of commercial uses appropriately allowed within residential and rural areas.

#### Findings

- A) Commercial uses are dependent upon public service infrastructure --

Commercial uses require good access to transportation facilities. Roads are essential for employees, customers and receiving of merchandise. Parking areas and public transportation should also be available, as should such other utilities and services as electricity, water, telephone, fire protection, sewer, police protection, and waste disposal.

- B) Commerce provides a substantial number of jobs --

In 1978, approximately 8,050 of the 22,250 jobs in the county were in the retail trade and services sectors. (California Employment Development Department, March 1979). By comparison industry provided 6,250 jobs and government provided 4,350 jobs.

C) Commercial uses vary widely in intensity --

The commercial designation covers a wide variety of uses ranging from neighborhood-serving facilities such as convenience food stores, and laundromats to regional services such as shopping centers, and auto sales and services. Provisions must be made to accommodate all types of commercial uses, however care must be exercised in establishing the appropriate level of intensity. A neighborhood grocery may be appropriate where a body and fender shop would not.

D) Commercial districts can have major aesthetic impacts --

Businesses catering to the general public have a need to be seen and identified; consequently such businesses prefer to locate on major streets and thoroughfares. Each new business seeks to somehow differentiate itself from those previously established. Signs, lighting, distinctive architecture and paint schemes are all used to attempt to establish visibility. As such commercial areas develop the total impact can readily become garrish and chaotic.

E) Existing isolated commerce activities serve rural needs --

Existing isolated commerce activities have developed historically to serve rural needs guided by criteria and standards or present zoning requirements. In most cases the continuation of these established isolated uses will be compatible with adjacent land uses and should be allowed to exist in their present form with the ability to expand to meet economic demand.

Commerce  
Goals and Policies

GOAL #1

Provide for the establishment and expansion of regional, tourist, community and neighborhood commercial uses sufficient to accommodate the needs of residents and visitors of Mendocino County.

Policies

- 1a. Periodically revise the general plan to maintain a sufficient variety of commercially classified vacant land to ensure opportunities for growth and expansion as the demand develops.
- 1b. Contain commercial developments within cohesive units in order that the uses established therein will assist and supplement one another.
- 1c. Consider commercial centers in areas which are appropriate nuclei of growing rural community centers.

- I 1d. Recognize rural isolated commerce activities as unique non-conforming uses that should be allowed to continue under the objective and policies of non-conforming uses, and be allowed to expand the same use with a use permit.

#### GOAL #2

Ensure that commercial districts in Mendocino County are attractive, enjoyable places to shop and conduct business.

#### Policies

- I 2a. Develop a sign control ordinance to provide for improved business identification and elimination of existing eyesores.
- I 2b. Establish appropriate controls through zoning, the use permit process or development review to ensure adequate provision of parking, landscaping and pedestrian access.
- 2c. In areas of anticipated growth and expansion, make ample provision for off-street parking, pedestrian ways, landscaping and undergrounding of utilities prior to loss of such opportunities.
- 2d. Encourage restoration and rehabilitation of existing buildings, especially those which possess architectural significance.



## 7. INDUSTRY

Industrial land use can be categorized in two general ways. The two general land use categories are extraction and processing industries. Extraction industries include agriculture, forestry, fishing and mining. The processing industries develop products from materials extracted and from synthetic materials otherwise created.

Extraction of raw materials through agriculture or mining to a large degree depends on the kind of land that produces the commodity being sought. The location of that extraction industry ground in the Mendocino County General Plan has been specified by sub-area. Also described in the individual CAC plans is the extent of either existing or proposed extractive processes.

Probably the most familiar manifestation of industrial development is processing. Processing of the various raw materials takes place in many areas of the county. The most widespread processing of a product is, of course, the forestry products. Lumber mills and secondary by-products processing occurs in all of the major CAC's in Mendocino County in one form or another. Agricultural products are also processed in many locations in the county. The primary processing activity is that of wine making. Most of the animals that are locally raised for meat and fiber are processed outside of the county.

Just as industrial uses fall into two categories, processing also falls within two categories. Heavy industrial processing plants and light industrial plants. Heavy industrial is manifest in large lumber mills such as Masonite, Georgia Pacific and Louisiana Pacific plants. These plants consume a large amount of space and require a heavy investment in equipment that is capable of refining large and weighty material.

The location of such heavy manufacturing areas should be located in close proximity to good transportation facilities such as freeway and rail, and should be located in such a way as to have a minimum effect on the high quality lands, air, water quality and on surrounding land uses. It is usual in the attempt to locate heavy industrial uses, to create natural or man-made buffers to separate heavy industry from surrounding agriculture or commercial/residential areas. An example of such barriers includes a freeway, a river, a rail facility, and in some cases, agricultural land. It is also usual in locating heavy industrial use that the primary wind direction be such as to blow fumes, noise and odor away from predominant urban and suburban land areas.

The plans that have been drafted by the CAC's and the county planning staff have attempted, where possible, to meet the locational criteria referred to above. The additional locational reality that must be dealt with in any definition of industrial

location, is that of an existing industry. In many CAC areas all of the above criteria cannot be met because of past practices in industrial location. These locational problems can, to a large degree, be reduced through use permits or developmental permits which require that the industrial developer create mitigation to problems specified in particular areas.

Light industrial uses must also be located to minimize environmental and land use conflicts. While location of light industrial uses are more flexible than the location of heavy industry, conflict mitigation through physical separation and natural buffers is necessary. Light industrial uses fit well within industrial park areas where centralized access for supply and export consolidates transportation impacts.

### Issues

1. Appropriate locations for industrial uses.
2. Amount of land necessary to be designated for industrial uses.
3. Potential for degradation of the environment for increased industry.
4. Types of industry desired.
5. Benefits to the community deriving from increased industry.
6. Amount of review and regulation necessary.
7. Growth-inducing impacts of industrial development.

### Findings

- A) Industry is dependent upon public service infrastructure --

Industrial uses require good access to transportation facilities. Road access is essential both for employees and for shipping and receiving of goods. Rail or water facilities may be essential to certain industries. Most industries also require such utilities and services as electricity, water, telephone, fire protection, sewer, police protection, natural gas, and waste disposal.

- B) Industry requires level land --

Industrial buildings, storage areas, and parking require extensive level areas which can be both expensive and environmentally disruptive to create if not naturally available.

- C) Industry needs tolerant neighbors --

Even the least obtrusive of industries may prove annoying to non-industrial neighbors. Necessary traffic, night

operations, lights, noises and odors, even if not excessive, can be objectionable. Industry requires protections from intruding incompatible uses just as do agriculture or forestry.

D) Industry must be planned for --

There has been little planning for industry in Mendocino County. Areas surrounding Ukiah, Fort Bragg and Willits were designated "Urban City", a classification in which industrial zoning was consistent, however, very little industrial zoning was applied to vacant land. A firm seeking to establish a plant in the county was given little guidance toward finding an appropriate site. Instead the firm had to submit a zone change application and hope to survive the public hearings. If industry is to be attracted to the county, appropriate areas must be set aside for industrial use and expansion.

E) Mendocino County industries are resource oriented --

Industries in Mendocino County are predominantly resource oriented, performing the initial processing of raw materials, and consequently are best located near the sources of their materials to reduce transportation costs. Lumber mills, aggregate plants and wineries are examples. Such industries also tend to require more extensive areas of land for storage and waste disposal than manufacturing industries.

F) Industry has the potential to cause major environmental impacts --

Historically industry has been a major source of environmental disruption. More recently environmental protection controls together with industry's desire to be a responsible member of the community have significantly reduced environmental impacts resulting from ongoing industrial functions. There continues to exist the possibility of environmental disruptions due to accidents or natural calamities.

G) Industry is a major employer --

In 1978, approximately 6,250 of the 22,250 in the county were industrial (California Employment Development Department, March 1979). By comparison, government provided 4,350 jobs, retail trade provided 4,125 and services provided 3,925.

Industry  
Goals and Policies

GOAL #1

Encourage a well-diversified industrial sector resistant to seasonal or cyclic fluctuations.

Policies

- I 1a. Provide an adequate amount of land designated for in-

dustrial uses to accommodate new industries where land use conflicts are minimized.

- 1b. Encourage industries most likely to provide employment for unemployed people residing in the county.
- 1c. Maintain a planning and regulatory climate sensitive to industry's needs.
- 1d. Encourage the extension locally of the wood products manufacturing process to include secondary and remanufacturing operations.
- 1e. Provide sufficient industrial areas to encourage light, clean industries.
- 1f. Reserve land surrounding industrially designated areas for uses compatible with industry.
- 1g. Industrial sites should be located near existing transportation systems and utility services.
- 1h. Promote the provision of an adequate transportation system to serve the resource-based industries of the county.
- 1i. Encourage the location of and investment in those production facilities necessary to efficiently utilize all products of forest and agricultural lands, including currently wasted biomass. The location of the production facilities and necessary backup commercial establishments shall be in those locations that minimize conflicts with other uses.

## GOAL #2

The County shall seek an environment free of industrial pollution.

### Policies

- 2a. Require that new industries locating in the county incorporate the best available pollution control technology.
- 2b. Strive to attract industries most compatible with Mendocino County's environment.
- 2c. Provide for industrial uses on lands least sensitive to intensive use.
- 2d. Support industry in its efforts to develop innovative methods of pollution-free operations.
- 2e. Support industrial programs to develop means to reduce or use waste products.
- 2f. Require that industries conducting ongoing earth-moving operations incorporate wind and water erosion control measures.



## D. DEVELOPMENT POLICIES

A recurrent subject brought up in the response to the Draft GP/EIR was the allowance of home occupations and cottage industrial uses as accessory to residential use. Policies to define and govern such uses are provided:

### 1. HOME OCCUPATIONS

#### Issues

1. A clear definition as to what constitutes a home occupation is needed.
2. The "visibility" of a home occupation may cause concerns with surrounding residents in their perception of what amenities their area has to offer.

#### Findings

Currently home occupations are defined in Section 20-5. Home occupations require:

1. That it be a use carried on within a dwelling by the inhabitants thereof, which use is incidental to the residential use of the dwelling;
2. Is confined within the dwelling and occupies not more than 25% of the space thereof;
3. Involves no sales of merchandise directly, not related to and incidental to the services offered;
4. Is carried on by members of the family occupying the dwelling with no other person employed;
5. Produces no evidence of its existence beyond the premises (except signs of not more than one square foot) such as noise, smoke, odors, vibration, etc.

#### GOAL

The county shall continue to address and allow home occupations through applicable ordinances.

#### Policies

1. The intent of home occupations shall be to maintain the residential character of the premises or its surroundings on which it is located.
2. Examples of home occupations might include:
  - a. Artists and sculptors
  - b. Authors and composers
  - c. Babysitters

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- d. Beauticians and barbers (limited to one chair operation)
- e. Dressmaking, seamstress and tailors
- f. Home crafts, such as model making, rug weaving, or lapidary work
- g. Office facility of an architect, attorney-at-law, broker, consultant, dance instructor, engineer, instructor in arts and crafts, insurance agent, land surveyor, music instructor or tutor
- h. Repair or fix-it shop
- i. Home occupation uses shall be reviewed annually for revision and update.

Home occupations may include, but are not limited to, the uses listed above. Home occupations may also include other uses which are similar in nature.

- 3. Uses that might not be deemed home occupations:

Antique shops, auto repair, baker, eating establishment, funeral chapel, or funeral home, gift shop, hospital, painting of vehicles, boats and trailers, stable or kennel, upholstering, veterinary clinic.

- 4. Home occupations shall be allowed only after securing appropriate permits.
- 5. A home occupation is a use by right in any land use classification.

## 2. COTTAGE INDUSTRIES

### Issues

- 1. Many existing uses in the county do not presently fit under the rigid "use spectrum" as allocated under the zoning ordinance.
- 2. The present zoning ordinance does not have a definition of cottage industry.
- 3. Rural lifestyles and a concept of independent living have fostered demand for allowance of cottage industrial type uses.

### Findings

- 1. Cottage industrial uses could cover a wide array of land uses; some examples gleaned from CAC meetings include: stuffed toy manufacturing, precision machine part production in-home, yurt manufacturing, well drilling equipment storage and repair, mail order warehousing, building materials and heavy equipment storage, furniture manufacturing, wood products fabricating and appliance repair.



2. Once a cottage industry is established, growth of the business becomes a serious land use question. The presumption behind cottage industrial uses is that they are small scale and compatible with surrounding uses. Growth of such enterprise can make an innocuous use objectionable and can create service demands (i.e. road improvement, police protection, fire protection) not originally anticipated. Re-capitalization for new site purchase, facilities construction and erection and material movement presents a barrier to relocation of a growing enterprise. Strict controls are needed to govern cottage industrial use.
3. Controls are needed to insure that cottage industrial uses are compatible with surrounding land uses. Generally, cottage industries are requested in residential areas where noise, dust, traffic and other factors can easily become bothersome to surrounding residents.

#### GOALS

1. The county shall address and allow cottage industries through applicable ordinances.
2. Cottage industries shall include all of those uses permitted as a home occupation.

#### Policies

1. The intent of cottage industrial regulations shall provide for limited commercial and industrial uses in conjunction with a dwelling which are more extensive than home occupations, but which, like home occupations, do not alter or disturb the residential or rural nature of the premises or its surroundings.
2. Examples of uses which may come under cottage industrial regulations shall be developed in the zoning ordinance.
3. Cottage industrial use shall only be allowed after securing of a use permit.
4. Cottage industries will only be allowed if they can meet all of the following criteria:
  - a. The use is compatible with surrounding land uses.
  - b. The use is environmentally sound regarding the project site and region.
  - c. No additional service demands will be created by use allowance.
5. The impact of non-resident employees shall be addressed in the conditional use permit process.

Finally, substantial confusion occurred over the difference between non-conforming uses and non-conforming lots. To provide a clear distinction between the two issues, each topic receives its own set of policy guidelines:

### 3. NON-CONFORMING USES

#### Issues

1. Uses and structures which have been established in accordance with requirements for zoning districts may become "non-conforming uses and structures".
2. Abatement of legal non-conforming uses is presently lax, which does not coincide with present non-conforming use regulation language.
3. There exist many isolated land uses in the county which are necessary or desirable land uses, and are not logical candidates for abatement.

#### Findings

Present non-conforming use regulations are established in Section 20-86 of the zoning code. Generally, these regulations govern legal non-conforming uses in the following manner:

1. If no structural alterations are involved, a legal non-conforming use may continue or be changed to a similar or less intensive use.
2. If a legal non-conforming use is abandoned for over six months, it may not be resumed.
3. Maintenance of legal non-conforming structures is allowed as long as it does not amount to more than 50% of the building value.
4. No physical expansion or major alteration of a legal non-conforming use building is allowed.
5. When a building involved in a legal non-conforming use is destroyed for more than 50% of the building value, it cannot rebuilt, and the non-conforming use terminates.

#### GOALS

1. Provide more equitable legal non-conforming use regulation which reflects present abatement enforcement.
2. Recognize the many existing, legal non-conforming uses, and allow their continuance.
3. Allow expansion of legal non-conforming uses as long as it poses no adverse impacts.

## Policies

1. New legal non-conforming use regulations shall extend abandonment term from six months to one year. Additionally, seasonal use should qualify as keeping a legal non-conforming use active, as long as it is used each year.
2. Destruction of buildings shall not terminate a legal non-conforming use, and the building may be rebuilt to its previous dimensions and arrangement, and utilized to the same extent prior to its destruction, or expanded through the use permit process.

## Objective

To allow for the continued utilization of existing improvements and uses made nonconforming by the General Plan, where the use is compatible with adjacent land uses and where it is not feasible to replace the activity with a conforming land use. The intent is that as a result of this general plan process, if land use classification or zoning changes occur on parcels of land where improvements are in place and where activities have been or are being carried out as an allowed use in that classification or zoning district, then that specific use may be continued and shall be entitled to all the rights, privileges and uses allowed prior to the classification or zoning changes, including the right of expansion. This section is not intended to negate the requirements for use permits when appropriate or specified elsewhere in the County Code.

## Policies

1. Allow the continuation of all existing legal uses which do not conform to the type of activity designated on the General Plan map, but which conform to the following criteria:
  - a. If the existing use is contained within a structure built to accommodate the existing use or a structure which has been converted to accommodate the existing use, conformance with the applicable Building Code and/or other ordinances and standards adopted by the County is required.
  - b. The use has been shown to be compatible with adjacent land uses, such that its hours of operations, noise levels, aesthetic impacts, and traffic to the site do not now significantly adversely impact adjacent land uses.
2. All existing legal structures conforming with Section 1 above may be continued, remodeled, rehabilitated, or reconstructed as long as the exterior dimensions of the structure remain the same and no increase in use results.

3. Existing legal uses conforming with Section 1, above, may be expanded or changed to a use of lesser intensity on the following basis:
  - a. That it is not reasonably economically or physically feasible to make the use of the property compatible with the applicable general plan land use designation;
  - b. That the use is and will be compatible with adjacent land uses and that any increased adverse impacts on access or public facilities and services will be mitigated;
  - c. That the site is physically separate from surrounding properties such that continued non-conforming use is appropriate in that location; and
  - d. Expansion of the non-conforming use will require a use permit in each case. Such use permits shall be granted only if affirmative findings can be made on the criteria listed above ((a)(b)&(c)).
4. Encourage discontinuation or relocation of non-conforming uses which do not conform to the type of activity designated on the General Plan map and which do not conform with the criteria listed above.
5. Permanent uses established by use permit, and are made non-conforming by the General Plan, shall be considered legal non-conforming uses. Such uses shall continue as legal non-conforming uses only if they abide by the conditions of the use permit.

### Policy

There are certain existing isolated legal land uses in the County which have been established through historical practice, and operate with a perceived public benefit. The above described land uses are contained within land use classifications which make them legal non-conforming uses. To retain the individual identity of the existing land use, and the ability of that use to expand based upon economic demand or public need, there shall be an "Isolated Service" zoning regulation provided within the zoning ordinance. Said zoning regulation shall contain the following standards:

- A. In each instance in which a legally existing land use made non-conforming by the general plan is determined to warrant "Isolated Service" designation, a contract zoning shall be established for the site
  - i. The contract zoning shall designate the nature, extent and intensity of the land use in question and will control said use to the extent that exists upon adoption of the contract zoning.



- ii. To modify or expand the use under contract, a modification of the contract, as a rezoning will be required.
  - iii. A condition of the contract will require rezoning to a zone in conformance with the surrounding land use designation should the use be abandoned.
- B. As criteria for modification or expansion of use, the following findings must be made prior to approval of such requests:
- i. The proposal will not result in unmitigated adverse impact to surrounding land uses.
  - ii. The expansion or modification is found necessary to meet economic demand or increased public need.

#### 4. NONCONFORMING LOTS

##### Issue

Legally created lots presently developable under existing zoning regulations, may not meet proposed General Plan minimum parcel sizes. An example of this situation would be a 20 acre parcel presently zoned A-C being recommended for "AG 40 acres" designation. Under the recommendation, the property would become a "legal nonconforming lot", as it would be smaller than the 40 acre minimum proposed. There is concern that the lot will become undevelopable by virtue of the newly established density.

##### Findings

1. It is the present policy and operation of the County Planning Department that all "legal nonconforming lots" are allowed to be developed in accord with the zoning regulations on that property regardless of the lot size. If a legally created parcel of 20 acres is zoned "AG-40", use of that parcel is the same as allowed on a 40 acre parcel. Allowable uses are not diminished by virtue of the "legal nonconforming" status.
2. Variances to minimum lot size are not required to develop "legal nonconforming lots". The Mendocino County zoning ordinance was recently amended to include the following wording:

Section 20.73(E)(3) - "When any lot(s) has been legally created and is subsequently zoned to a minimum parcel size larger than the existing parcel size, said lot(s) shall be found to be legally nonconforming and shall not be subject to requirements for variance to minimum lot size. (Ordinance Number 3211, Adopted 1978.)"

3. In some rare cases, small legal nonconforming lots, within low density designations, require variance to setback regulations for front, rear and side yards, since larger setbacks are required under the larger minimum lot size regulations. While there has been no problem in obtaining these variances, time delay is involved.

It is anticipated that in the new Zoning Ordinance setback requirements for all zones which permit a single family dwelling (residential, agricultural, and timber zones) will be standardized to the greatest extent possible. Therefore, if a small lot is designated as AG 40 acres, the setbacks will be no different than if lots were zoned or designated residential. This provision should greatly decrease the need for a variance to setbacks in all but the most unusual circumstances.

4. The Board of Supervisors has adopted a merger ordinance containing criteria for parcel merger and exemption from merger.

It is the intent of the Board of Supervisors that non-conforming parcels which are exempted from merger by the County's merger ordinance be treated as legal non-conforming parcels. It is also the intent of the Board of Supervisors that parcels which are not exempted will merge.

#### GOAL

Mendocino County shall not deprive landowners a reasonable use of their properties by virtue of a change in parcel density in a manner consistent with goals and policies for resource protection and orderly development.

#### Policies

1. Legally created lots not meeting standards for minimum parcel size to permit use or development under a zoning, subdivision, or other County ordinance will be allowed to develop under the County's non-conforming lot policy.
2. Reduce or eliminate the need for variance to setback requirements for legal non-conforming lots through amendment of the zoning code.
3. Lots not meeting standards for minimum parcel size to permit use or development under a zoning, subdivision, or other County ordinance will be subject to merger with commonly held adjoining lots subject to the exceptions contained in the County's merger ordinance.
4. The County shall enforce the merger ordinance to insure protection of natural resource lands and promote orderly development of private property.

NOTE: Revisions adopted by the Board of Supervisors on March 14, 1983, eliminated pages 109, 109a, and 109b.

## 5. DENSITY

The concept of density in a general plan is central to the understanding, and implementation, of land use directions. It has been the historical practice in Mendocino County to interpret minimum parcel size and parcel density as one in the same. This is founded in the zoning regulations which have allowed one residential unit per ownership. Therefore, except in special cases or on unclassified land, a land division has been required if more than one residential unit has been desired.

The substantial number of non-approved residential units occurring grouped on one ownership is evidence that this land use regulation is out-moded. Additionally, the recent large number of agricultural employee use permit applications is further data which indicates more than one unit per ownership is desired.

Requests or inquiries about additional units range across a wide variety of demands which can be expressed under the following headings:

Agriculture - Need for agricultural labor, whether permanent or temporary is expressed. Additionally, expanded family residential use or joint-ownership and management of agricultural property can result in need or desire for additional units.

Expanded Family - Desire to allow children, parents and/or other relatives' use of separate residential units on the same property is often expressed.

Alternative Lifestyles - Joint ownership or the desire to live in communal arrangements can create demand for additional units on the same parcel.

In addition to dwelling group situations, the hilly topography of the county creates demand for an alternative way of interpreting parcel density.

In the uplands area, especially on larger ownerships, certain portions of property may be amenable to residential development; having existing access routes, suitable soils and slopes, and available water does not usually occur at many places on uplands parcels. It makes sense to take advantage of these areas, allowing increased site density while retaining overall density of the parcel. Many advantages are inherent in clustering units as opposed to spreading them across the landscape. Environmental impacts from grading associated with building site and roadway construction can be minimized. Vegetation removal, protection of resource lands, economics of jointly used water and sewage disposal facilities, and economics realized in power and phone extensions are but a few of the examples of clustering advantages. Ownership averaging of density is an appropriate tool for realizing these advantages.



Finally, a recent California Supreme Court decision has eliminated the traditional way of regulating property occupancy, which has been to define a "family", or the number of people presumed to be allowed to reside per residence. Lengthy discussion has occurred at staff level regarding alternative ways in which to define parcel occupancy. No effective or ultimately rational method was developed which controlled the number of residents. Therefore, a base definition of density was developed which defined a residential unit.

### Policy

For purposes of residential use, one permanent residence shall be defined as a building, or buildings, with living space, one kitchen area and adequate sanitary facilities.

### Policy

To enable innovative structure design and building site utilization while at the same time minimizing impact on the environment, the following criteria shall be applied to detached structure residential units:

1. The number of detached bedrooms shall not exceed two (2).
  - a. A detached bedroom shall not contain any kitchen or sanitation facilities.
  - b. A detached bedroom shall not be larger than 500 square feet.
2. In lieu of one detached bedroom, a guest cottage may be substituted.
  - a. A guest cottage is differentiated from a detached bedroom in that sanitation facilities may be allowed.
3. In lieu of a guest cottage a temporary health care unit may be substituted. Zoning regulations shall be developed which allow one temporary housing unit for temporary health care purposes.

The following standards shall apply to approval of such units:

- a. The temporary unit shall be allowed only after securing an annually renewable use permit. Said permit may be administratively renewed after original securance.
- b. A statement shall be submitted, signed under penalty of perjury, at the annual renewal by the applicant that the use of the residence is for the same purpose as originally allowed.



- c. Should the use of the temporary unit cease, it must be removed or put in dead storage.

It is envisioned that the above allowance could meet demands for extended family living arrangements; allowing separate living space, and at the same time not having to create entire separate residences, for additional members of the family.

As a final policy, staff believes that economics and desire for individual living space will result in few, if any dormitory type living arrangements so the following policy is offered:

#### Policy

Definitions of farm labor camps, organized camps, schools and other use-types which result in dormitory living arrangements will be defined in the zoning code and will control allocation of such intensive uses.

With the set of policies established to define what one residential unit consists of, further policy is needed to define allowance of multiple residences. Since density is the foundation of a general plan, reliance on the prescribed densities is paramount. Therefore, it is proposed to allow additional units as long as the property has sufficient area to permit additional units guided by general plan density. An example of this would be a person who has a 40 acre parcel and has a general plan designation of Rural Residential 10 acres. Under the proposed policy (below) the property owner has two options in which additional residences can be placed on his property: 1) to divide the parcel into four ten acre parcels (if environmentally feasible). The number of additional units allowed on a parcel will be determined by the acreage of the parcel, and the density allowance of the general plan.

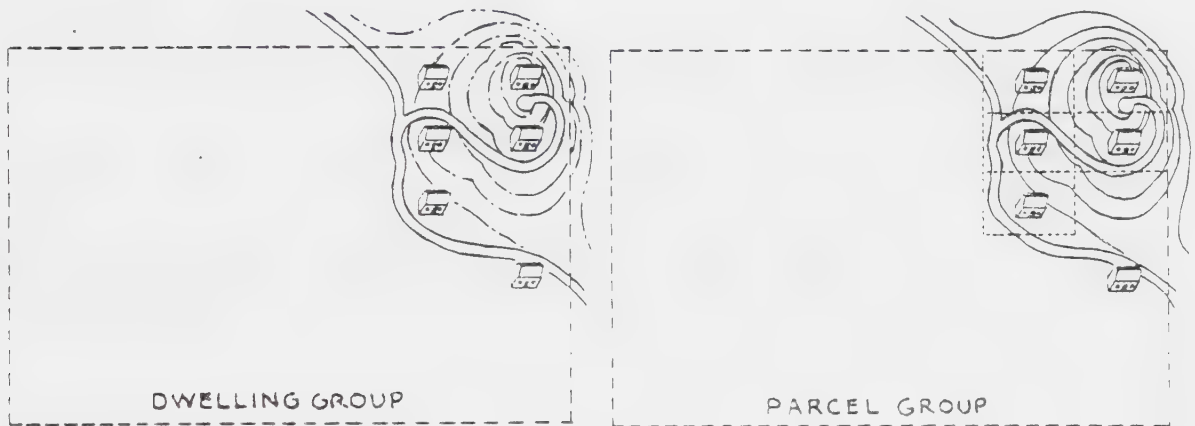


## 6. CLUSTERING

There are two types of clustering: the dwelling group and the parcel group.

In the dwelling group all the units are developed on one parcel. This arrangement accommodates those desiring a joint development of land, a family living situation, or to provide housing for employees.

In the parcel group, each dwelling is developed on a separate parcel. This arrangement allows for individual financing through traditional lenders, for individual sale of units, clarifies areas of responsibility, appeals to the traditional preference for individual ownership and avoids the problems of the inheritance of undivided ownerships.



### Definitions:

Density - The number of dwellings per acre.

Clustering - The grouping of dwellings or parcels in suitable areas as opposed to even dispersal over a larger area.

Dwelling Group - A cluster of dwellings on one parcel, the maximum number determined by general plan density.

Parcel Group - A cluster of parcels, the maximum number determined by general plan density.

## GOAL

To provide an optional method of density interpretation through clustering:

To protect the productive portions of major holdings.

To preserve open space.

To reduce the costs of development.

## Policies

- a. The County will allow both types of clustering in the remote resource land, agriculture, rangeland, forest land, rural residential and remote residential land use designations.
- b. The County will review proposals through the use permit process. Parcel clustering proposals will also be regulated through the land division process.
- c. Clustering projects shall not exceed the general plan density for the area in question except as provided by the zoning ordinance.
- d. Density transfers within a general plan designation on an ownership will be allowed, but density transfers between general plan designations on an ownership shall be allowed only as follows:

<u>From</u>	<u>To</u>
Agriculture .....	Rangeland, Forest Land (not in TPZ), Remote Residential
Rangeland .....	Forest Land (not in TPZ), Remote Residential
Forest Land .....	Rangeland, Remote Residential

- e. A use permit for a cluster development shall be granted only if:
  - i. At least 75 percent of the project area will remain in open space.
  - ii. The open space area from which density was transferred shall be protected from future division by means such as contract with the County, conservation easement, open space conservation agreements or other appropriate legal mechanisms.



- iii. The proposed project is compatible with adjacent farm, range or forest uses and will not interfere with accepted management practices on these lands.
- iv. The proposed clusters will not inhibit resource management of the remaining open space, are near existing access routes and are not in hazard areas.
- v. The proposed cluster development will be served adequately by essential public facilities and services such as highways, streets, police and fire protection and schools.
- vi. Site disturbance will be minimized by clustering, road location along contours and building site selection.
- vii. Applicable development standards of the zoning ordinance can be met.
- viii. The proposed clustering shall not utilize the prime land so as to insure the preservation of the valuable site resource.

## E. GENERAL PLAN INTENT SECTION

### Introduction

The purpose of this section is to give clear direction both to the general public and the decision makers in areas that could become subject to substantial interpretation problems and to set forth the basic premises under which the land use policies are to be interpreted.

This section also includes policies applicable to dwellings built without issuance of required permits.

### Zoning Ordinance

Zoning is an integral part of the General Plan process in Mendocino County. The Goal and Policy sections of this document were developed and adopted pursuant to the belief and understanding that zoning districts would become the primary and overriding control in determining the intensity of development and minimum parcel sizes in all zoning districts; i.e., new applications for division of land must consider not only that classification's minimum parcel size, density and policies of the General Plan, but also those other constraints and limitations not discernible in this document.

In many cases this may lead to zoning to size or zoning to a larger size than permitted in that specific classification even though the classification would remain the same. Some limiting factors being: proof of water, percolation, services available, building sites, meeting road standards, environmental concerns, etc. In summary, a specific land use classification specifying densities is not an entitlement for full development and build-out.

### EXISTING DWELLINGS BUILT WITHOUT REQUIRED PERMITS

The County of Mendocino recognizes that a significant number of dwellings, for which required permits were not obtained, have been constructed within the County. While no accurate count has been made, estimates range from 1,000 to 5,000 units. Although many of these dwellings may not be constructed in accordance with County building standards, they do provide needed housing, predominantly for low and moderate income families. Consequently, the County has been reluctant to initiate any enforcement program that might result in demolition.

Nevertheless, the County is concerned that dwellings not built to County standards may be hazardous to either their occupants or to others. Unsafe building practices may result in fire hazard, soil instability or structural failure. Improperly designed or constructed waste disposal systems may result in exposure to disease or water pollution. The County is also aware that failure to enforce building regulations will encourage greater numbers of violations.

In an attempt to impose a level of enforcement sufficient to achieve minimum health, safety and welfare standards, and at the same time allow

the continued existence of as many of the dwellings as possible, the County established the Clean Slate program in 1986. Clean Slate provided an opportunity for owners of dwellings built without required permits to make the structures legitimate by meeting basic health, safety and environmental standards. Applications for Clean Slate had to be submitted by August 1986, and applicants were given three years to bring their dwellings into compliance. One hundred sixty-one applications were received, and of those eighty-eight completed the program successfully. Of those that did not complete the process, many did make progress toward completion but failed to fulfill all requirements prior to the expiration of the program.

To allow those applicants that entered the Clean Slate process additional time to achieve completion, an additional extension shall be provided, extending the deadline for completion of all Clean Slate requirements to August 1, 1991.

It is the policy of Mendocino County that residential structures built without required permits prior to April 24, 1982 may be made legitimate by meeting the following criteria:

1. Applicants must meet basic health, safety, structural and environmental standards of the Clean Slate Program (MCC Section 18.04.090).
2. All dwellings must show evidence of current residential uses as described by the applicant, at the time of the site review inspection.
3. Vacant and/or abandoned dwellings shall not be certified for anticipated future uses.
4. Residential density including accessory residential structures that existed prior to April 24, 1982, shall be recognized as legal nonconforming, provided the structures can and will meet the health, safety, and environmental standards required by this program. Nothing shall prohibit the erection of new structures of equivalent size with all the necessary and proper permits, to replace existing residential uses. Under this program, approved existing units shall be eligible for temporary occupancy for a period of three years, which shall include the initial two year period along with the one year extension. An additional extension shall be provided which shall expire on August 1, 1991 to allow for the completion of all requirements under the Clean Slate/BLUR II Program, provided the existing unit(s) have received temporary clearances from the appropriate agencies.
5. The applicant shall sign an indemnity agreement in connection with the application.
6. All applicants who were granted extensions to complete all Clean Slate/BLUR II requirements by August 1, 1989 shall be granted an additional extension which shall expire on August 1, 1991. Failure to satisfy all Clean Slate/BLUR II requirements during the period of



this extension shall result in enforcement as specified in paragraph 12.

7. No additional extensions shall be granted.
8. If the subject property and the development thereon are located in areas of geologic (slope/erosion) and/or flood hazard, an engineering report will be required from a licensed engineer to address those concerns. Applicants may be required to relocate such development to a more suitable site if mitigation measures are not possible to implement, or may be subject to abatement (replacement units may be permitted per Policy Number 4 provided the proper use permits were applied for prior to August 1, 1988).
9. Fire protection concerns, mitigation measures, etc., will be addressed by applicable fire protection agencies on a case by case basis.
10. The County of Mendocino shall record a notice on the title of the subject property noting that the improvements thereon are in violation of building, health, and/or zoning regulations which will be withdrawn at the time of compliance. Thereafter a notice shall be attached to the deed that such improvements are legally nonconforming and may not have been built to conventional building codes.
11. Appeals filed by an applicant will be to the appropriate body (i.e. planning to the Planning Commission/Board of Supervisors, building to the Building Appeals Board, and health to the Health Officer).
12. Failure to comply with the provisions of this program will result in enforcement of Title 16 for health and safety violations, Title 18 for building code violations and Chapter 20.216 of Title 20 for zoning violations.
13. Any residential structure recognized by this process that does not meet the required building, health and environmental standards by August 1, 1991, shall be abated.
14. Structures used as residences which can not be upgraded to meet health and safety codes and temporary living structures, i.e. travel trailers, bus conversions, etc. will not be permitted under this program. However, each such unit may establish a density credit provided the occupant of such a unit establishes proof of ownership of the subject property to the satisfaction of the Department of Planning and Building Services, prior to April 24, 1982 and can sign a statement demonstrating continuous residential use of the living unit under penalty of perjury since that time. The owner of such units which exceed allowable density may then be able to replace this unit with an approved/permitted dwelling not to exceed 640 square feet provided a minor use permit is granted. The minor use permit process will address the environmental concerns raised by such a replacement proposal.



The intent of this program is to provide an opportunity for non-permit residential development within the County to be legally recognized in a simple, efficient, and economical manner. Those structures constructed after April 24, 1982 shall conform with zoning, including density, building and health standards.



## LAND USE CLASSIFICATIONS

The following pages summarize the land use classifications depicted on the land use map accompanying the County General Plan. The map and classifications summary provide an overview of the goals and policies contained within the nine elements of the General Plan. The map obviously can depict only those goals and policies that lend themselves to graphic representation. The user should be aware that a complete understanding of the General Plan cannot be obtained from a review of the plan map and classifications summary. The goals and policies of each of the nine General Plan elements must all be considered in making determinations of General Plan intent.

The classifications summary includes a statement of intent for each classification to provide the user with greater awareness of the intended objectives of each land use classification. The summary does not attempt to list each and every use appropriate within a classification, such specificity being more appropriately handled within the County zoning regulations. The intent of the summary is to list the major types of uses proposed for each classification, believing that more exact interpretations can be consistently determined through a sound understanding of the underlying goals, policies and intent of the plan itself. Not all of the uses listed under the general uses may be appropriate in all areas of the classification. Again, zoning would provide the increased level of specificity, indicating in greater detail the distribution, location, type and intensity of land uses within each classification.

Similar cautions apply to the minimum parcel size indicated for each classification. The figure listed is the acreage appropriate only when all conditions are favorable; that is, the figure represents the minimum allowable parcel size within the classification. The presence of various constraints or of local community preference for lower densities may require the application of larger minimum parcel sizes through zoning in order that the zoning be consistent with the General Plan. Again, as with allowable uses, it is the goals and policies contained within the text that govern.

The minimum parcel size stated for each classification only applies to divisions of land. Parcels legally created prior to adoption of the General Plan, but smaller than the stated minimum, shall be afforded all uses enjoyed by a parcel of the minimum size. See policy for addressing non-conforming parcels on page I-106.

Minimum parcel size areas and maximum dwelling densities are expressed either in acres or in square feet. When acres are used, the entire area, or gross area, within the parcel boundary is meant. When areas are expressed in square feet, the net area within the parcel boundary is indicated. Net parcel area is computed by subtracting from the gross parcel area the area of any portions of the lot which will be subject to easements for lot access, roadways, drainage or inundation.

The maximum dwelling density for each classification may be increased by 25% under the terms of Chapter 1207, Statutes of 1979, Bonus Incentives for Affordable Housing, and Policy 3c of the Housing Element.





## 1. INDUSTRIAL

Intent. The industrial classification is intended to be applied to lands suited for major industrial uses, where necessary services such as transportation systems and utilities exist or can be efficiently provided, where disruption of proximate uses will be least, and where the potential for environmental disruption is minimum or can be adequately controlled.

General Uses. Processing and manufacturing, industrial public utilities, industrial public facilities, compatible commercial uses, utility installations, limited residential uses.

### Minimum Parcel Size.

Within water and sewer districts: none.

Within water or sewer districts: 12,000 square feet.

Not in a water or sewer district: 40,000 square feet.

Maximum Dwelling Density. Residential use shall be limited to a single caretaker dwelling per legally created parcel or employee housing not exceeding one unit per 6,000 square feet or three units total, except on the Pinoleville Rancheria where one single family residence and one second unit per parcel may also be allowed.

## 2. COMMERCIAL

Intent. The Commercial classification is intended to be applied to lands appropriate for a variety of commercial uses. Lands classified Commercial should be within or contiguous to developed areas, should be served by the publicly-maintained circulation network and should be situated in locations where future growth is anticipated. Residential uses within the commercial classification shall require County findings that the site need not be reserved for future commercial uses, and that the residential use is compatible with existing or anticipated commercial uses.

General Uses. General commercial, public facilities, public services, public assemblies, residential developments, utility installations.

### Minimum Parcel Size.

Within water and sewer districts: None for commercial uses; 6,000 square feet for residential use.

Within water or sewer districts: 12,000 square feet.

Not in a water or sewer district: 40,000 square feet.

Maximum Dwelling Density. One single family dwelling per legally created parcel. County review and approval required for more than one dwelling per legally created parcel.

Within water and sewer districts: 1 multiple family dwelling unit per 1,500 square feet of lot area.

Within water or sewer districts: 1 multiple family dwelling unit per 12,000 square feet of lot area.

Not in a water or sewer district: multiple family dwelling units not permitted.

### 3. RURAL COMMUNITY

Intent. The Rural Community classification is intended to be applied to small unincorporated towns and community centers which provide a variety of community and tourist oriented goods and services, but which may not have developed identifiable commercial or residential districts. The classification may also be appropriate around a central commercial or industrial nucleus. The Rural Community classification designates transitional areas which should be logical centers for future growth. As development occurs, provisions should be made for the development or expansion of public service facilities such as schools, fire stations, water systems, cemeteries, sewer systems, recreation facilities and solid waste disposal.

General Uses. Residential developments, mobile home parks, community commercial, tourist commercial, cottage industries, light industrial, public facilities, public services, public assemblies, utility installations.

#### Minimum Parcel Size.

Within water and sewer districts: None for commercial use; 4,000 square feet for mobile home subdivisions and manufactured home subdivisions; 6,000 square feet for residential use.

Within water or sewer districts: 12,000 square feet.

Not in a water or sewer district: 40,000 square feet.

Maximum Dwelling Density. One single family dwelling per legally created parcel. County review and approval required for more than one dwelling per legally created parcel.

Within water and sewer districts: 1 single family dwelling per 4,000 square feet of lot area in mobile home parks, mobile home subdivisions and manufactured home subdivisions. 1 single family dwelling per 6,000 square feet of lot area. 1 multiple family dwelling unit per 1,500 square feet of lot area.

Within water or sewer districts: 1 single family dwelling per 12,000 square feet of lot area, or 1 multiple family dwelling unit per 12,000 square feet of lot area.

Not in a water or sewer district: 1 single family dwelling per 40,000 square feet, multiple family dwelling units not permitted.

#### 4. SUBURBAN RESIDENTIAL

Intent. The Suburban Residential classification is intended to be applied to transitional lands adjacent to cities or towns, which lands are appropriate to accommodate future residential growth. Land within the Suburban Residential classification should have moderate to light constraints for residential development, should be served by the publicly-maintained road network, and should be located within public service districts or the logical extensions thereof. Portions of lands within the Suburban Residential classification will be appropriate for development of residential subdivisions. Such areas should be developed as major subdivisions, not minor subdivisions; or retained in parcels of sufficient size to be economically developed as subdivisions at some future time.

General Uses. Residential developments, mobile home parks, community commercial, cottage industries, public facilities, public services, public assemblies, utility installations.

##### Minimum Parcel Size.

Within water and sewer districts: 4,000 square feet for mobile home subdivisions and manufactured home subdivisions; 6,000 square feet.

Within water or sewer districts: 12,000 square feet.

Not in a water or sewer district: 40,000 square feet.

Maximum Dwelling Density. One single family dwelling per legally created parcel. County review and approval required for more than one dwelling per legally created parcel.

Within water and sewer districts: 1 single family dwelling per 4,000 square feet of lot area in mobile home parks, mobile home subdivisions and manufactured home subdivisions. 1 single family dwelling per 6,000 square feet of lot area. 1 multiple family dwelling unit per 1,500 square feet of lot area.

Within water or sewer districts: 1 single family dwelling per 12,000 square feet of lot area, or 1 multiple family dwelling unit per 12,000 square feet of lot area.

Not in a water or sewer district: 1 single family dwelling per 40,000 square feet, multiple family dwelling units not permitted.

#### 5. RURAL RESIDENTIAL RR-1, RR-2, RR-5, RR-10

Intent. The RR classification is intended to encourage local small scale food production (farming) in areas which are not well suited for large scale commercial agriculture, defined by present or potential use, location, mini-climate, slope, exposure, etc. The Rural Residential



classification is not intended to be a growth area and residences should be located as to create minimal impact on agricultural viability.

General Uses. Residential uses, agricultural uses, cottage industries, residential clustering, public facilities, public services, conservation and development of natural resources, utility installations.

Minimum Parcel Size.

RR-1: 40,000 square feet.

RR-2: 80,000 square feet.

RR-5: Five acres.

RR-10: Ten acres.

Maximum Dwelling Density. One dwelling per 40,000 square feet, 80,000 square feet, five acres or ten acres, as designated on the land use map. County review and approval required for more than one dwelling per legally created parcel.

6. REMOTE RESIDENTIAL :20 acres, :40 acres

Intent. The RMR classification is intended to be applied to lands having constraints for commercial agriculture, timber production or grazing, which are well suited for small scale farming and low density agricultural/residential uses by the absence of such limitations as inadequate access, unacceptable hazard exposure or incompatibility with adjoining resource land uses. The classification is also applied to some areas which might not otherwise qualify except for the fact that the land has been divided and substantial development has occurred.

General Uses. Residential uses, agricultural uses, cottage industries, residential clustering, public facilities, conservation and development of natural resources, and recreation, utility installations.

Minimum Parcel Size. Twenty acres, or forty acres, as designated on the Land Use Map.

Maximum Dwelling Density. One dwelling per 20 acres or 40 acres as designated on the Land Use Map. County review and approval required for more than one dwelling per legally created parcel.

7. AGRICULTURAL LANDS

Intent. The Agricultural Lands classification is intended to be applied to lands which are suited for and are appropriately retained for production of crops. The classification should include lands presently under Type I agricultural preserve contracts, land having present or future potential for significant agricultural production, and contiguous or intermixed smaller parcels on which non-compatible uses could jeopardize the agricultural use of agricultural lands. Permitted non-agricultural uses, to the greatest extent possible, should not occur on lands that might otherwise be devoted to crop production.



General Uses. Residential uses, agricultural uses, processing and sale of agricultural products, cottage industries, residential clustering, uses determined to be related to and compatible with agriculture, conservation, processing and development of natural resources, utility installations.

Minimum Parcel Size. Forty acres.

Maximum Dwelling Density. One dwelling per forty acres, County review and approval required for more than one dwelling per legally created parcel.

## 8. RANGE LANDS

Intent. The Range Lands classification is intended to be applied to lands which are suited for and are appropriately retained for the grazing of livestock. The classification should include land eligible for incorporation into Type II agricultural preserves, other lands generally in range use, intermixed smaller parcels and other contiguous lands, the inclusion of which is necessary for the protection and efficient management of range lands.

General Uses. Residential uses, agricultural uses, forestry, cottage industries, residential clustering, uses determined to be related to and compatible with ranching, conservation, processing and development of natural resources, recreation, utility installations.

Minimum Parcel Size. One hundred sixty acres.

Maximum Dwelling Density. One dwelling per 160 acres, County review and approval required for more than one dwelling per legally created parcel.

## 9. FOREST LANDS

Intent. The Forest Lands classification is intended to be applied to lands which are suited for and are appropriately retained for the growing, harvesting and production of timber and timber-related products. The classification should include lands eligible to be zoned Timberland Production; intermixed smaller parcels and other contiguous lands, the inclusion of which is necessary for the protection and efficient management of timber resource lands.

General Uses. Residential uses, forestry, timber processing, agricultural uses, cottage industries, residential clustering, uses determined to be related to and compatible with forestry, conservation, processing, and development of natural resources, recreation, utility installations.

Minimum Parcel Size. 160 acres.

Maximum Dwelling Density. One dwelling per 160 acres, County review and approval required for more than one dwelling per legally created parcel.

## 10. REMOTE RESOURCE LANDS

Intent. Remote Resource Lands classification is intended to be applied to lands which are suited for and are appropriately retrained for the grazing of livestock and the production of timber. The classification is intended to protect these lands from the pressures of residential development.

General Uses. Grazing, agriculture, forestry, residential, residential clustering, conservation, processing, and development of natural resources, recreation, uses determined to be related to and compatible with ranching and timber operations, utility installations.

Minimum Parcel Size. 640 acres.

Maximum Dwelling Density. One dwelling per 640 acres, including employee housing. County review and approval required for more than one dwelling per legally created parcel.

## 11. PUBLIC LANDS

Intent. The Public Lands classification is intended to be applied to land in public ownership not appropriately included in some other classification. The classification is also intended to be applied to lands held and managed for public recreation or appropriate for acquisition for public purposes.

General Uses. Agricultural uses, forestry, conservation and development of natural resources, public facilities, recreation, utility installations.

Minimum Parcel Size. Not applicable.

## 12. OPEN SPACE

Intent. The Open Space classification is intended to be applied to lands not suited for development or to lands most valuable in their undeveloped natural state. Factors limiting the development potential of land would include such constraints as unstable soils, high fire hazard, remote location, poor access and susceptibility to flooding. Valuable natural areas could include rare and endangered species and habitat, riparian vegetation zones, or wild and scenic rivers.

General Uses. Agricultural uses, forestry, conservation and development of natural resources, recreation, utility installations.

Minimum Parcel Size. No division permitted unless it can be demonstrated that the division furthers the intent of the Open Space classification.

Maximum Dwelling Density. No dwellings permitted except to further the open space intent.

### 13. PUBLIC SERVICES

Intent. The Public Services classification is intended to be applied to lands presently being used for major public service facilities and to lands appropriately reserved for expansion of or construction of new public serving facilities.

General Uses. Sanitary landfills, cemeteries, airports, corporation yards, electric generating plants, power substations and other support facilities, schools, hospitals, civic centers, fairgrounds, utility installations.

#### Minimum Parcel Size.

Within water and sewer districts: None

Within water or sewer districts: 12,000 square feet.

Not in a water or sewer district: 40,000 square feet.

Maximum Dwelling Density. Residential use shall be limited to a single caretaker dwelling per ownership.





## G. GLOSSARY OF TERMS

Accessory use - a use or building incidental or subordinate to the principal use or building located upon the same lot.

Adequate potable water supply - the water quantity and quality required by the Mendocino County Division of Environmental Health, as defined in its "Subdivision and Parcel Map Requirements", as revised.

Agricultural land - land which is producing or capable of producing plant crops or the raising of animals. Ag land includes prime ag land, rangeland, land in existing ag use, land with agricultural potential, and land designated Agricultural Preserve.

Agricultural Preserve - agricultural land which qualifies under the state Williamson Act and county ordinance as prime ag or range land and for which the owner has contracted for a minimum of 10 years with the county to maintain in agricultural use. This designation provides for tax reductions on the property in return for the land use restrictions.

Alquist-Priolo Act - the Alquist-Priolo Special Studies Zone Act adopted in 1972 provides for public safety from surface rupture in hazardous fault zones. The act requires the State Geologist to delineate special studies zones about 1/4 mile wide along potentially hazardous faults. Local governments are required to regulate development projects within the special studies zones in accordance with policies and criteria established by the State Mining and Geology Board.

Anadromous fish - those species of fish, such as salmon and steelhead, which mature in the ocean and migrate into streams to spawn.

Aquifer - a porous soil or geological formation lying between impermeable strata in which water may move for long distances, yield ground water to springs and wells.

Best Management Practices (BMP) - practice or combination of practices that is determined by the State Water Resources Control Board, after problem assessment, examination of alternative practices and appropriate public participation, to be the most effective practicable (including technological, economic and institutional considerations) means of preventing or reducing the amount of pollution generated by nonpoint sources to be a level compatible with water quality goals.

Clustering - the grouping of dwellings or parcels in suitable areas as opposed to even dispersal over a larger area.

Commercial timberland - forest land which is devoted to and used for growing and harvesting timber, or for growing and harvesting timber and compatible uses and which is capable of growing an average volume of wood fiber of at least 15 cubic feet per acre.

Conflicting uses - land uses by which the quality of each individual use is harmed by the others when they occur together in the same area, due to either competition for limited resources or use by-products which damage alternative uses. When one use prevents another "conflicting uses" become incompatible uses.

Cottage industry - Small scale commercial and industrial uses in conjunction with a dwelling which are more extensive than home occupations, but which, like home occupations, do not alter or disturb the residential or rural nature of the premises or its surroundings. Usually located in outlying areas of the county.

Cumulative impacts - Two or more individual effects which, when considered together, are considerable or which compound or increase other impacts.

Density - the number of residential units per land area.

Fault, active - a linear break in the earth's surface that has undergone movement in recent geologic time (the last 10,000 years) and may be subject to future movement.

Goal - a general statement of purpose toward which effort is directed. (See also "Policy")

Incompatible uses - land uses which cannot exist together by reason of either competition for limited resources or use by-products which prevent or severely interfere with the alternative use.

Infrastructure - the basic equipment, utilities, installations and services essential for the development, operation, and growth of a city or county.

Land capability class - one of the eight classes of land in the land capability classification system of the U.S. Soil Conservation Service. The eight classes are distinguished according to the inherent ability of land to be used without permanent damage due to erosion and other causes, with the highest capability beginning with Class I.

Land use plan - the specific expression in map and text form of objectives which are considered desirable by a governing body with the power to approve and implement the plan.

Long-term - more than 10 years in the future.

Natural area - a land or water area which is:

- (a) unique or of particular scientific or educational interest (e.g., habitat or rare or endangered species, isolated populations, paleontological sites, noteworthy geological features, and type localities of soils, plants or animals), or
- (b) representative of one of the various biotic communities found in the State.

Non-conforming use - a use which was lawfully conducted within a building or structure or was conducted upon open land prior to the effective date of the use regulations for the area in which it is located and with which regulations it does not comply.

Open space - any parcel or area of land or water which is essentially unimproved and devoted to an open space use: preservation of natural resources; managed production of resources; outdoor recreation; public health and safety.

Policy - a definite course or method or action to guide and usually determine consistent present and future decisions towards the attainment of a goal.

Prime agricultural land - land which qualifies for inclusion in an agricultural preserve Type I or Type II. (See "Prime Rangeland" for definition of Type II). Prime agricultural land eligible for inclusion in an agricultural preserve Type I shall meet any of the following qualifications:

1. All land which qualifies for rating as Class I or Class II in the Soil Conservation Service land use capability classifications.
2. Land which qualifies for rating 80 through 100 in the Storie Index Rating.
3. Land which supports livestock used for the production of food and fiber and which has an annual carrying capacity equivalent to at least one animal unit per acre as defined by the United States Department of Agriculture.
4. Land planted with fruit or nut-bearing trees, vines, bushes, or crops, which have a nonbearing period of less than five years, and which will normally return during the commercial bearing period an annual basis from the production of unprocessed agricultural plant production not less than two hundred dollars (\$200.00) per acre.
5. Land which has returned from the production and unprocessed agricultural plant product an annual gross value of not less than two hundred dollars (\$200.00) per acre for three of the previous five years.

Prime rangeland - all land comprised of soils classified as grass, oak-grass, and other soils that may produce feed at the rate of 40 acres or less per animal unit, and which qualifies for inclusion in an Agricultural Preserve Type II:

1. Animal unit (A.U.) is defined as the quantity of forage required for good growth and production of one mature head of cattle or its equivalent in feed requirements; 5.8 tons of hay shall be deemed such feed requirement.



2. The definition and separation of rangeland soils shall be as indicated in the soil-vegetation maps filed with the University of California Cooperative Extension Service in Mendocino County and in accordance with the Storie land-use rating and grazing percentage of range soils. Such grazing percentage and grazing rate shall be based upon the soils map of the Upland Soil Survey of Mendocino County. Land not included in the Upland Soil Survey may qualify for inclusion if the carrying capacity can be shown to be forty (40) acres or less per animal unit.
3. Notwithstanding any other provision to the contrary, a minimum size requirement of one hundred (100) contiguous acres per application.
4. A minimum production potential of ten (10) animal units of feed, such production potential requiring a production of feed sufficient for fifty (50) sheep or ten (10) mature beef or dairy animals.
5. A range in continuous use for livestock production and having within the preceding three (3) years a one-year history of such production.

Prime soils - those soils which help define prime agricultural land, prime rangeland, and prime timberland.

Prime timberland - land classified as Timber Site Class I, II or III on the Soil-Vegetation map of Mendocino County and which qualifies for inclusion in Timber Preserve Zone. (When completed, the new Soil Survey of the county by the Soil Conservation Service will supersede this map.)

Proof of Water - shall mean the demonstration that sufficient water is or will be available to parcels in a development, or to special uses and shall consist of a report, prepared by a qualified person using the best information available. Said report shall use the best information available at the time, including, but not limited to, water studies by official agencies, geology reports, well log data, historical documentation, and where necessary, water sources on each parcel, lot, or special use granted. Proof of Water cannot be deemed a guarantee of specific quantities of water over long periods of time.

Rangeland - land on which the existing vegetation, whether growing naturally or through management, is suitable for grazing and browsing. It includes any natural grasslands, savannas, shrublands, woodlands and wetlands which support a vegetative cover of native grasses, grass-like plants, forbs, shrubs or naturalized species; it is land dominated by vegetation other than trees. Many woodlands (e.g., chaparral and oak woodlands) are included because their response to range management principals and activities are similar to those of other shrubby ecosystems.



Residential unit - a building(s) with living space, one kitchen, and adequate sanitary facilities.

Riparian - of, pertaining to, or situated on the banks of a stream, river, or lake.

Sewer district - a legally constituted governmental entity, one of the purposes of which is the provision of sewage collection, treatment and disposal service to users within a defined boundary. For the purpose of determining allowable density under the general plan, "Sewer District" shall include any public or private sewage system approved by the County Department of Public Health.

Short-term - ten years or less.

Timberland Preserve Zone - a zoning district established pursuant to the California Forest Taxation Reform Act of 1976 which is designed to preserve lands devoted to and used for growing and harvesting timber and compatible uses.

Water district - a legally constituted governmental entity, one of the purposes of which is the provision of water to users within a defined boundary. For the purpose of determining allowable density and minimum parcel size under the general plan, "Water District" shall include any public or private water system approved by the County Department of Public Health.

Watershed - the total area above a given point on a stream that contributes water to the flow at that point; the entire region drained by a waterway.

Zoning - the demarcation of a planning area by ordinance into zones and the establishment of regulations to govern the use of the land and the location, height, shape, use and coverage of structure within each zone.



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## I. APPENDICIES

### Appendix 1: Demography

#### Population Trends

The County of Mendocino is experiencing the same migratory population shift apparent throughout the State of California. Since 1970, California's population has been moving northward from the southern metropolitan areas into the northern "rural" counties.

Mendocino County's historical growth rate was moderate between 1900 and 1960. Mendocino County's population had the largest increase between 1970 and 1980 since the lumber industry boom in the 1940's brought an increase in population of 46.6%. The State of California Department of Finance estimates Mendocino County's current (January 1, 1980) population at 65,500 indicating a ten year increase in population of 28.2%. The County planning staff estimates a current county population of 73,226, representing a 43.3% increase, Table D-1.

Only 40% of the state's population growth since 1970 has resulted from in-migration, while Mendocino County's net in-migration accounted for 82.5% of the local population increase. The natural increase, births, minus deaths, represented a ten year increase of 17.5%, Table D-2.

The geographic distribution of the population growth of the county is similar to statewide trends. The cities increased by 26.6% in the last ten years while the unincorporated areas of the county's population has increased by 52.2%.

Major growth areas by housing unit increases were Willits, with 123.85% and South Central Coast, with a total increase of 102.19% over the last ten years, Table D-3.

Because we do not have final 1980 census figures nor a system to project the 1980 census, we are projecting that the County population will continue to increase at a rate similar to that of the 1970's decade for the next five years. Projections beyond five years cannot be made without accurate 1980 census information and a reasonable social and economic study of the county in relationship to the state and the nation.

#### Age of Population

The most dramatically increasing age sector of the county is from 25 to 34 years, which more than doubled (6017 to 12610) from 1970 to 1980, Table D-4. As the number of people in the 15 to 34 age group has increased, so has the number of births in the county increased. A moderate increase in most other age groups has occurred. The most noticeable change was the very slight increase in the 45-54 age group, which in 1970 represented the highest percentage of the overall population.

The county can expect increases in the 20-44 age group. Additional births, and the existing 0-4 group indicate increases in the 0-9 age group. The county should also anticipate an increase of persons 62 and older based on statewide projections.

## Racial and Ethnic Factors

In 1970 the majority of the residents were caucasian (95.8%). Native Americans comprised 2.8%, Blacks, .6% and other mixed races, .5%. Persons of Spanish surname or Spanish speaking numbered 2304 or 4.5% of the population. No change of racial or ethnic structure of the county has been apparent.

## Household Composition

Of the 73,226 persons within the County, a majority reside in single and multiple family dwellings. 10,003 persons (13.66%) occupy mobile homes and 1199 (1.64%) live in group quarters, Table D-5.

The percentage of owner-occupied households has declined from 63% in 1970 to 55.5% in 1980.

The number of persons per occupied dwelling unit has decreased from 3.08 to 2.75 persons per unit in the last 10 years.



## TOTAL POPULATION, MENDOCINO COUNTY

BY DECADE: 1900 to 1980

Year	Total Population	Net Change	Percent Change
1900	20,500	--	--
1910	23,929	3,429	16.7%
1920	24,116	187	.8%
1930	23,505	-611	-2.5%
1940	27,864	4,359	18.5%
1950	40,854	12,990	46.6%
1960	51,059	10,205	25.0%
1970	51,101	42	.08%

Source: U.S. Census

1980 <sup>1/</sup>	65,500	28.2%
--------------------	--------	-------

1980 <sup>2/</sup>	73,226	43.3%
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1/ Department of Finance

2/ Staff estimate

1/10/80



## COMPONENTS OF POPULATION CHANGE

Year	Population	Births <sup>1/</sup>	Deaths <sup>1/</sup>	Natural Increase
1970	51,101 (census)			
1971		853	569	284
1972		786	539	247
1973		831	557	274
1974		855	536	319
1975		961	534	427
1976		973	550	423
1977		1074	494	580
1978		1179	519	660
1979	(Est)	1208	554	654
1980 (Jan)	73,226	8720	4852	3868

1/ Source: Mendocino County Health Department, Division of Vital Statistics

1/7/80





# TOTAL HOUSING UNIT INCREASE AND DISTRIBUTION

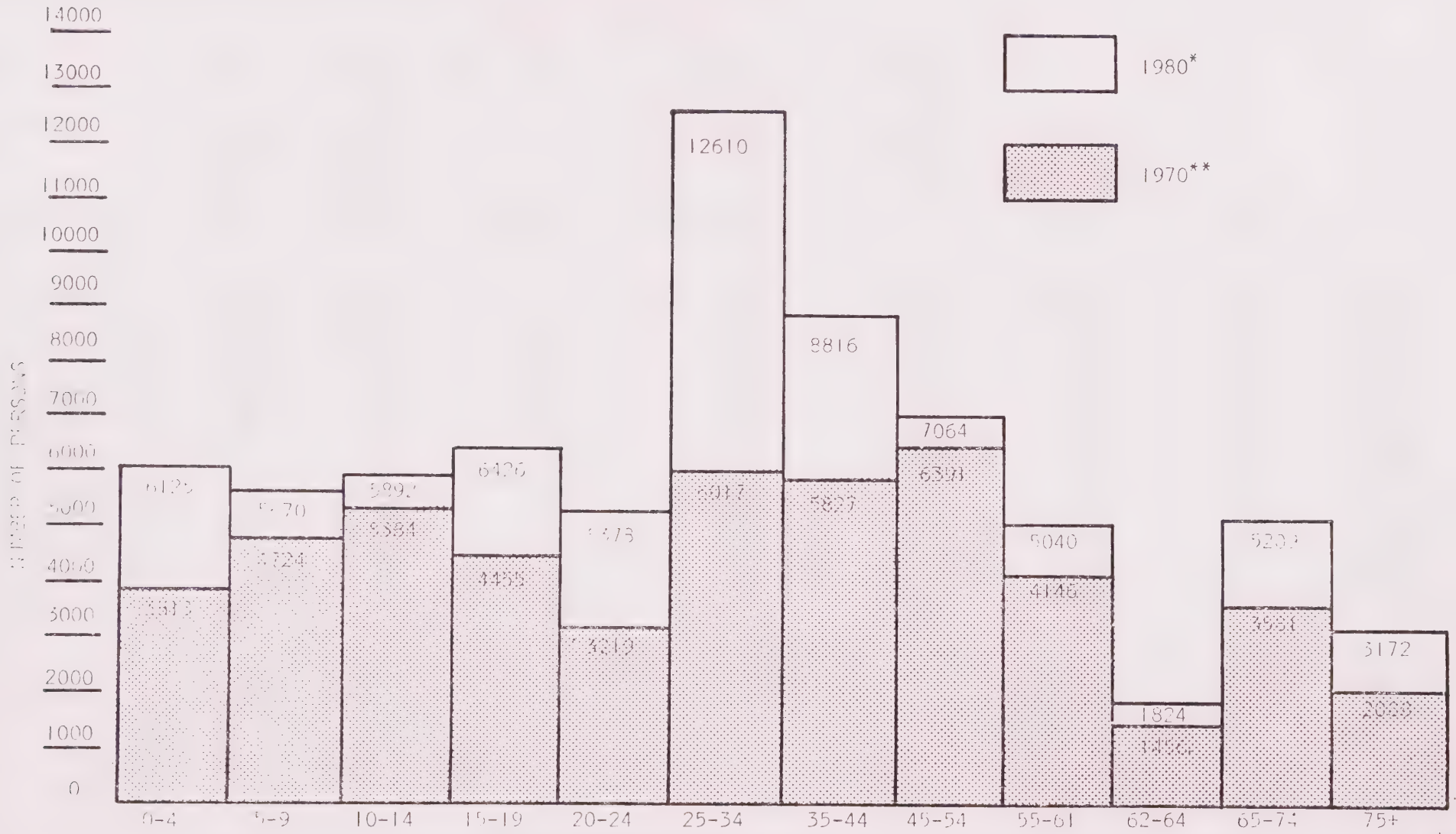
## 1970 CENSUS

## JANUARY 1, 1980

Area	Total Units	% of County Total	% of Unincor- porated Total	Total Units Estimated	% of County Total	% of Unincor- porated Total	# Increase	% Increase
North Coast #1	330	1.74%	2.65%	447	1.53%	2.18%	117	35.45%
North Central #2	1788	9.45%	14.35%	2924	10.04%	14.27%	1136	63.53%
South Central #3	821	4.34%	6.59%	1660	5.70%	8.09%	839	102.19%
South Coast #4	1063	5.62%	8.53%	1784	6.12%	3.70%	721	67.83%
Leggett #5	322	1.70%	2.59%	585	2.00%	2.85%	263	81.68%
Laytonville #6	713	3.77%	5.72%	1091	3.74%	5.32%	378	53.02%
Willits #7	1149	6.07%	9.22%	2572	8.83%	12.55%	1423	123.85%
Comptche #8	206	1.09%	1.65%	283	.97%	1.38%	77	37.38%
Anderson Valley #9	782	4.13%	6.28%	1172	4.02%	5.72%	390	49.87%
Round Valley #10	561	2.97%	4.50%	910	3.12%	4.44%	349	62.21%
Potter Valley #11	535	2.83%	4.30%	744	2.55%	3.63%	209	39.06%
Redwood Valley #12	976	5.16%	7.84%	1504	5.16%	7.34%	528	54.10%
Ukiah #13	2704	14.30%	21.71%	4224	14.50%	20.61%	1520	56.21%
Hopland #14	506	2.68%	4.06%	594	2.03%	2.90%	88	17.39%
UNINC. AREA PLUS POINT AREA TOTAL	12456	65.86%	100.00%	20494	70.38%	100.00%	8038	64.53%
Willits	1138	6.02%		1618	5.55%		480	42.18%
Ukiah	3539	18.71%		4836	16.60%		1297	36.65%
Fort Bragg	1781	9.42%		2170	7.45%		389	21.84%
COUNTY TOTAL	18914	100.00%		29118	100.00%		10204	53.95%

Columns may not add to 100% due to independent rounding

# MENDOCINO COUNTY POPULATION CHANGE BY AGE

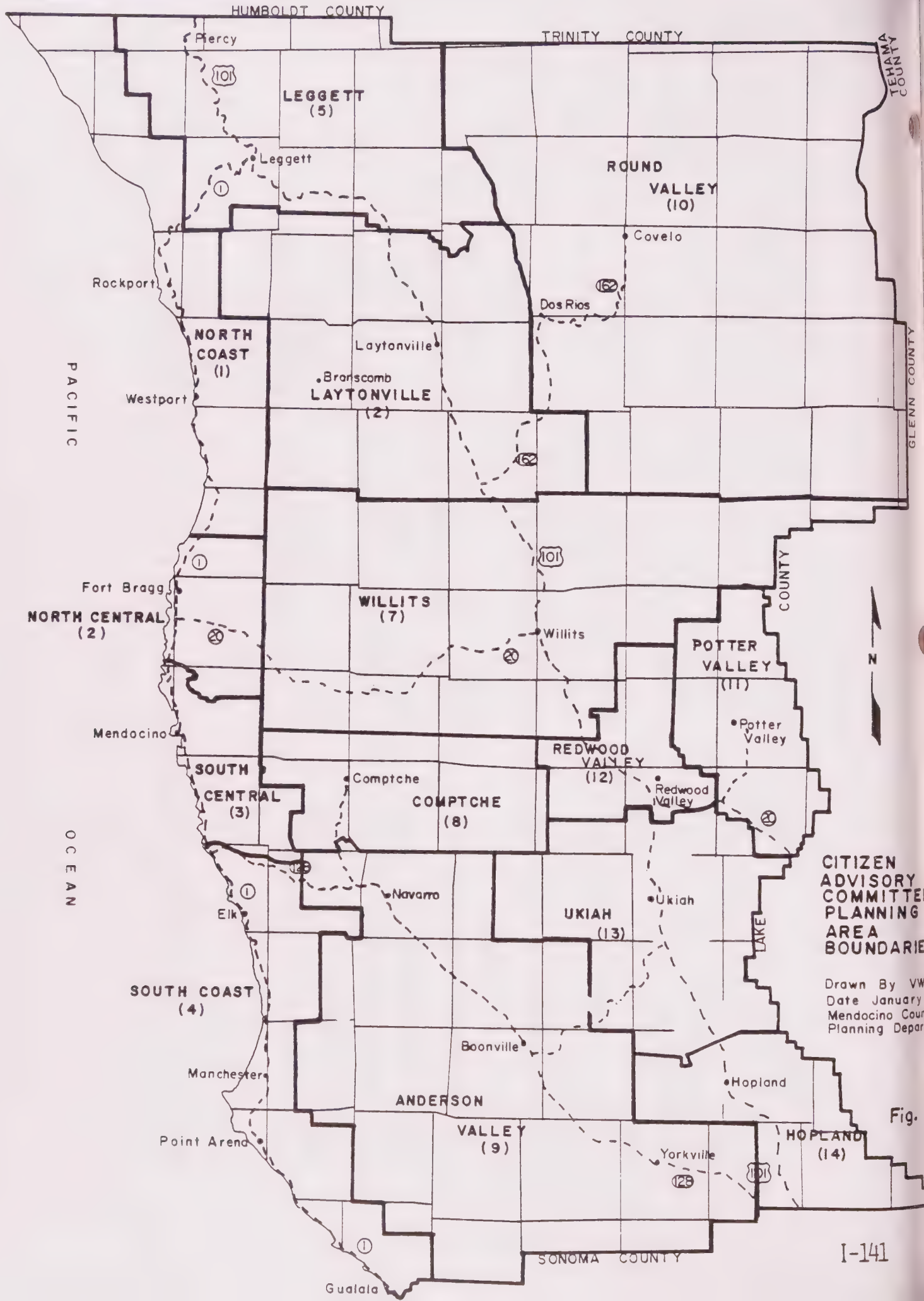


## \*\*POPULATION\*\*

City	Total	Households	Mobile Homes	Group Quarters
1/FORT BRAGG	5129	5066	123	63
2/	5326	5167	96	63
1/POINT ARENA	533	533	49	0
2/	560	508	52	0
1/UKIAH	12574	12169	721	405
2/	12663	11723	535	405
1/WILLITS	4122	4021	393	101
2/	4353	3892	360	101
*****				
1/TOTAL INCORPORATED	22358	21789	1286	569
2/	22902	21290	1043	569
*****				
1/UNINCORPORATED	42038	41408	6589	630
2/	50324	40734	8960	630
*****				
1/TOTAL COUNTY	64396	63197	7875	1199
2/	73226	62024	10003	1199
*****				

1/Figures from Department of Finance-

2/Staff estimates based on Department of Finance % of 1979 estimates and staff estimates total population for 1980-





NORTH COAST CAC  
PROJECTED GROWTH

	<u>1970</u>	<u>1980</u>	*	**	<u>1985</u>	**
Population	761	879	173	1052	947	1120
Housing Units	330	367	80	447	386	467
Persons/ Occupied Unit	3.02	2.79	2.2		2.78	
Vacant Seasonal	63	44	1	45	39	40
Vacant for Sale or Rent	15	7			7	

\* Non-permit/owner-built structures

\*\* Adjusted to reflect non-permit/owner-built structures



## NORTH CENTRAL CAC

## PROJECTED GROWTH

<u>UNINCORPORATED</u>	<u>1970</u>	<u>1980</u>	*	**	<u>1985</u>	**
Population	4691	7217	107	7324	8052	8159
Housing Units	1788	2874	50	2924	3747	3797
Persons/ Occupied Unit	3.09	2.79	2.2		2.38	
Vacant Seasonal	241	235	1	236	299	300
Vacant for Sale or Rent	29	52			67	
<u>CITY OF FORT BRAGG</u>						
Population	4455	5326			5847	
Housing Units	1781	2170			2407	
Persons/ Occupied Unit	2.67	2.54			2.51	
Vacant Seasonal	42	34			36	
Vacant for Sale or Rent	72	39			43	
<u>TOTAL CAC</u>						
Population	9146	12,543	107	12,650	13,899	14,006
Housing Units	3569	5044	50	5094	6154	6204
Persons/ Occupied Unit	2.87	2.68	2.2		2.43	
Vacant Seasonal	283	269	1	270	335	336
Vacant for Sale or Rent	101	91			110	

\* Non-permit/owner-built structures

\*\* Adjusted to reflect non-permit/owner-built structures





SOUTH CENTRAL CAC  
PROJECTED GROWTH

	<u>1970</u>	<u>1980</u>	*	**	<u>1985</u>	**
Population	1581	3456	402	3858	5505	5907
Housing Units	821	1475	185	1660	2062	2247
Persons/ Occupied Unit	2.60	2.79	2.2		3.10	
Vacant Seasonal	195	210	2	212	247	249
Vacant for Sale or Rent	18	26			37	

\* Non-permit/owner-built structures

\*\* Adjusted to reflect non-permit/owner-built structures



## SOUTH COAST CAC\*\*\*

## PROJECTED GROWTH

	<u>1970</u>	<u>1980</u>	*	**	<u>1985</u>	**
Population	2154	3841	325	4166	5345	5670
Housing Units	1063	1634	150	1784	2073	2223
Persons/ Occupied Unit	2.85	2.79	2.2		2.99	
Vacant Seasonal	240	228	2	230	248	250
Vacant for Sale or Rent	68	29			37	

\* Non-permit/owner-built structures

\*\* Adjusted to reflect non-permit/owner-built structures

\*\*\* Includes City of Point Arena





LEGGETT  
NORTH COUNTY CAC  
PROJECTED GROWTH

	<u>1970</u>	<u>1980</u>	*	**	<u>1985</u>	**
Population	555	859	435	1294	1094	1529
Housing Units	322	385	200	585	423	623
Persons/ Occupied Unit	2.76	2.79	2.2		3.09	
Vacant Seasonal	88	70	2	72	63	65
Vacant for Sale or Rent	33	7			7	

\* Non-permit/owner-built structure

\*\* Adjusted to reflect non-permit owner-built structures



## LAYTONVILLE CAC

## PROJECTED GROWTH

	<u>1970</u>	<u>1980</u>	*	**	<u>1985</u>	**
Population	1718	2363	270	2633	2807	3077
Housing Units	713	966	125	1091	1137	1262
Persons/ Occupied Unit	2.94	2.79	2.2		2.30	
Vacant Seasonal	113	102	2	104	114	116
Vacant for Sale or Rent	16	17			20	

\* Non-permit/owner-built structures

\*\* Adjusted to reflect non-permit/owner-built structures





WILLITS CAC  
PROJECTED GROWTH

<u>UNINCORPORATED</u>	<u>1970</u>	<u>1980</u>	*	**	<u>1985</u>	**
Population	3103	5750	761	6511	8203	8964
Housing Units	1149	2222	350	2572	3260	3610
Persons/ Occupied Unit	3.01	2.79	2.2		2.71	
Vacant Seasonal	94	121	4	125	163	167
Vacant for Sale or Rent	23	40			59	
<u>CITY OF WILLITS</u>						
Population	3091	4353			5242	
Housing Units	1138	1618			1959	
Persons/ Occupied Unit	2.80	2.75			2.73	
Vacant Seasonal	4	6			7	
Vacant for Sale or Rent	31	29			35	
<u>TOTAL CAC</u>						
Population	6194	10,103	761	10,864	13,445	14,206
Housing Units	2287	3840	350	4190	5219	5569
Persons/ Occupied Unit	2.90	2.77	2.2		2.71	
Vacant Seasonal	98	127	4	131	170	174
Vacant for Sale or Rent	54	69			94	

\* Non-permit/owner-built structures

\*\* Adjusted to reflect non-permit/owner-built structures



## COMPTCHE CAC

## PROJECTED GROWTH

	<u>1970</u>	<u>1980</u>	*	**	<u>1985</u>	**
Population	463	549	107	656	600	707
Housing Units	206	233	50	283	248	298
Persons/ Occupied Unit	2.91	2.79	2.2		2.77	
Vacant Seasonal	43	32	1	33	27	28
Vacant for Sale or Rent	4	4			4	

\* Non-permit/owner-built structures

\*\* Adjusted to reflect non-permit/owner-built structures





## ANDERSON VALLEY

## PROJECTED GROWTH

	<u>1970</u>	<u>1980</u>	*	**	<u>1985</u>	**
Population	1838	2279	435	2732	2557	2992
Housing Units	782	972	200	1172	1090	1290
Persons/ Occupied Unit	3.12	2.79	2.2		2.72	
Vacant Seasonal	167	138	2	140	131	133
Vacant for Sale or Rent	25	17			20	

\* Non-permit/owner-built structures

\*\* Adjusted to reflect non-permit/owner-built structures



## ROUND VALLEY CAC

## PROJECTED GROWTH

	<u>1970</u>	<u>1980</u>	*	**	<u>1985</u>	**
Population	1553	2184	162	2346	2628	2790
Housing Units	561	835	75	910	1039	1114
Persons/ Occupied Unit	3.08	2.79	2.2		2.68	
Vacant Seasonal	38	37	1	38	41	42
Vacant for Sale or Rent	19	15			18	

\* Non-permit/owner-built structures

\*\* Adjusted to reflect non-permit/owner-built structures





## POTTER VALLEY CAC

## PROJECTED GROWTH

	<u>1970</u>	<u>1980</u>	*	**	<u>1985</u>	**
Population	1524	1749	129	1878	1878	2007
Housing Units	535	684	60	744	779	839
Persons/ Occupied Unit	3.27	2.79	2.2		2.61	
Vacant Seasonal	49	45	1	46	46	47
Vacant for Sale or Rent	20	12			14	

\* Non-permit/owner-built structures

\*\* Adjusted to reflect non-permit/owner-built structures



## REDWOOD VALLEY CAC

## PROJECTED GROWTH

	<u>1970</u>	<u>1980</u>	*	**	<u>1985</u>	**
Population	2954	3861	107	3968	4454	4561
Housing Units	976	1454	50	1504	1810	1860
Persons/ Occupied Unit	3.27	2.79	2.2		2.58	
Vacant Seasonal	45	44	1	45	54	55
Vacant for Sale or Rent	29	26			32	

\* Non-permit/owner-built structures

\*\* Adjusted to reflect non-permit/owner-built structures





UKIAH CAC  
PROJECTED GROWTH

<u>UNINCORPORATED</u>	<u>1970</u>	<u>1980</u>	*	**	<u>1985</u>	**
Population	9424	10,864	275	11,139	11,694	11,969
Housing Units	2704	4100	125	4224	5158	5283
Persons/ Occupied Unit	3.76	2.79	2.2		2.38	
Vacant Seasonal	132	133	1	134	155	156
Vacant for Sale or Rent	68	73			92	
<u>CITY OF UKIAH</u>						
Population	10,095	12,663			14,274	
Housing Units	3539	4836			5722	
Persons/ Occupied Unit	2.97	2.70			2.57	
Vacant Seasonal	65	59			69	
Vacant for Sale or Rent	77	87			103	
<u>TOTAL CAC</u>						
Population	19,519	23,527	275	23,802	25,968	26,243
Housing Units	6243	8936	125	9061	10,880	11,005
Persons/ Occupied Unit	3.27	2.74	2.2		2.48	
Vacant Seasonal	192	248	1	249	224	225
Vacant for Sale or Rent	77	109			195	

\* Non-permit/owner-built structures

I-154

\*\* Adjusted to reflect non-permit/owner-built structures



## HOPLAND CAC

## PROJECTED GROWTH

	<u>1970</u>	<u>1980</u>	*	**	<u>1985</u>	**
Population	1141	1300	85	1383	1391	1476
Housing Units	506	554	40	594	580	620
Persons/ Occupied Unit	2.96	2.79	2.2		2.72	
Vacant Seasonal	107	78	1	79	58	59
Vacant for Sale or Rent	4	10			10	

\* Non-permit/owner-built structures

\*\* Adjusted to reflect non-permit/owner-built structures





## Appendix 2:

## RARE OR ENDANGERED PLANTS OF MENDOCINO COUNTY

CODE <sup>1</sup>	SCIENTIFIC NAME	COMMON NAME	STATUS	
			CNPS <sup>2</sup>	Official <sup>3</sup>
AGBLB	<i>Agrostis blasdalei</i>	Blasdale's Bent-grass	X	
	var. <i>blasdalei</i>			
AGCLC	<i>Agrostis clivicola</i>	Coastal Bluff Bent-grass	X	
	var. <i>clivicola</i>			
ARMC	<i>Arabis macdonaldiana</i>	Red Mountain Rock-cress	X	FE, CE
CACR-1	<i>Calamagrostis crassiglumis</i>	Thurber's Reed-grass	X	
CAFO-1	<i>Calamagrostis foliosa</i>	Leafy Reed-grass	X	CR
CACA-6	<i>Campanula californica</i>	Swamp Harebell	X	
CALAM	<i>Castilleja latifolia</i>	Mendocino Coast Paintbrush	X	
	ssp. <i>mendocinensis</i>			
CHHO	<i>Chorizanthe howellii</i>	Howell's Chorizanthe	X	
CYMO-1	<i>Cypripedium montanum</i>	Mountain Lady's Slipper	X	
EPNI	<i>Epilobium nivium</i>	Snow Mountain Willow Herb	X	
ERSU-1	<i>Erigeron supplex</i>	Supple Daisy	X	
ERKE-1	<i>Eriogonum kelloggii</i>	Kellogg's Buckwheat	X	
ERME-3	<i>Erysimum menziesii</i>	Menzie's Wallflower	X	
FRAG	<i>Fritillaria agrestis</i>	Stink Bells	X	
FRRO	<i>Fritillaria roderickii</i>	Roderick's Fritillary	X	CE
LEST-2	<i>Lewisia stebbinsii</i>	Stebbins' Lewisia	X	
LIBA-1	<i>Limnanthes bakeri</i>	Baker's Meadow-foam	X	CR
LUAN	<i>Lupinus antoninus</i>	Anthony Peak Lupine	X	
LUMI-2	<i>Lupinus milo-bakeri</i>	Milo Baker's Lupine	X	CR
MANEM	<i>Mahonia nervosa</i>	Hardy Creek Barberry	X	
	var. <i>mendocinensis</i>			
PHINC	<i>Phacelia insularis</i>	Northcoast phacelia	X	
	var. <i>continentis</i>			
PLHO	<i>Pleuropogon hooverianus</i>	Hoover's Semaphore Grass	X	CR
PODOP	<i>Pogogyne douglasii parviflora</i>	Douglas' Pogogyne	X	
PODU	<i>Polystichum dudleyi</i>	Dudley's swordfern	X	
RASC	<i>Raillardella scabrida</i>	Scabrid Raillardella	X	
SELAE	<i>Sedum laxum</i>	Red Mountain Stonecrop	X	
SICAC-2	<i>Silene campanulata</i>	Red Mountain Campion	X	
	ssp. <i>campanulata</i>			

EXTINCT OR EXTIRPATED PLANTS  
OF MENDOCINO COUNTY<sup>4</sup>

CALI-2	<i>Carex livida</i>	Livid Sedge	Extinct
HOAQ	<i>Howellia aquatilis</i>	Howellia	Extinct
LABU	<i>Lasthenia burkei</i>	Burke's Goldfields	Extirpated
LACO	<i>Lasthenia conjugens</i>	Contra Costa Goldfields	Extirpated
MAME	<i>Malacothamnus mendocinensis</i>	Mendocino Bush-mallow	Extinct
TRAM	<i>Trifolium amoenum</i>	Showy Indian Clover	Extirpated

1. Code name or acronym assigned each plant by the California Native Plant Society and used for identifying locations on County "Biological Resources" map.

2. California Native Plant Society (CNPS), Inventory of Rare and Endangered Vascular Plants of California, Special Publication No. 1, 2nd edition, April 1980. Note that the Calif. Dept. of Fish and Game, as of 2/15/80, uses this 2nd edition of the CNPS Inventory "as a notice to the public regarding the plants over which the Department is exercising management responsibilities" and as its "current species-of-concern list".

3. Includes the official federal designations of rare and endangered plant species as published in the Federal Register, or those designated by the California Fish and Game Commission and filed with the Secretary of State.

FE - Federally listed endangered species

CE - California listed endangered species

CR - California listed rare species

Legal protections stem from the federal Endangered Species Act of 1973, as amended, and the California Native Plant Protection Act of 1978.

4. Plants either presumed extinct in California or extirpated in Mendocino County, according to the 1980 CNPS Inventory.



Appendix 3: RARE OR ENDANGERED ANIMALS OF MENDOCINO COUNTY

<u>Species</u>	<u>Status</u>
Lotis Blue Butterfly	Endangered - F
Bald Eagle	Endangered - S, F
American Peregrine Falcon	Endangered - S, F
California Brown Pelican	Endangered - S, F

The above species or sub-species of California animals have been declared endangered or rare by the California Fish and Game Commission or endangered or threatened by the U.S. Secretary of the Interior. The official state of California listing of endangered or rare animals is contained in California Administrative Code, Title 14, Section 670.5. The official federal designation of endangered and rare species are published in the Federal Register.

Code designations are as follows:

- F - Federally listed species
- S - State listed species.





Appendix 4: OFFICIAL HISTORIC SITES  
OF  
MENDOCINO COUNTY

The following sites are officially listed on the National Register of Historic Places or the California Historical Landmarks Register. This list was compiled by the State Office of Historic Preservation, and do not represent those sites whose applications are pending. The Mendocino County Museum is also developing a county historic sites file by community to identify other potentially qualifying sites and structures.

National Register of Historic Places

<u>Site</u>	<u>Date Added</u>	<u>General Location</u>
Mendocino and Headlands	July 1971	Mendocino
Point Cabrillo Site	Feb. 1972	Caspar
Town Creek Archaeological Site	May 1976	Round Valley
Weller House	July 1976	Fort Bragg
Lovejoy Homestead	April 1978	Branscomb
Milano Hotel	June 1978	Gualala
Manchester Schoolhouse	June 1979	Manchester
Palace Hotel	Oct. 1979	Ukiah
Con Creek School	Oct. 1979	Anderson Valley
Getchell, O.W., House	Oct. 1980	Anchor Bay
Round Valley Flour Mill	Nov. 1980	Covelo

California Historic Landmarks

<u>Site</u>	<u>General Location</u>
Squaw Rock	Hopland
Fort Bragg	Fort Bragg
Round Valley	Round Valley
Mendocino Presbyterian Church	Mendocino
Sun House	Ukiah
Temple of Kuantu	Mendocino



Appendix 5: GENERAL PLAN MAPS LIST

1. Upland Soils, 1-1980, 1/2" = 1 mi.
2. Timber and Agriculture Preserve, State and Federal Lands, 1-1980  
1/2" = 1 mi.
3. Biological Resources, 1-1980, 1/2" = 1 mi, revised 2-1981.
4. Hazards, 1-1980, revised 4-1981, 1/2" = 1 mi.
5. Circulation Element, 6-1981, 1/2" = 1 mi.
6. Minerals, 8-1981, 1/2" = 1 mi.
7. Proposed Land Use, 8-1981, 1" = 1 mi., 6 sheets make up Co. wide map.
8. Land Use Inset Number 1, Ukiah, 7-1981, 1" = 1000'
9. Land Use Inset Number 2, Redwood Valley, 7-1981, 1" = 600'
10. Land Use Inset Number 3, Fort Bragg, 7-1981, 1" = 1000'
11. Mendocino County Equestrian and Hiking Trails, 1/2" = 1 mi.



## II. HOUSING





MENDOCINO COUNTY GENERAL PLAN

HOUSING ELEMENT

ADOPTED BY

MENDOCINO COUNTY BOARD OF SUPERVISORS

SEPTEMBER 1, 1970

REVISED:

SEPTEMBER 24, 1981

NOVEMBER 26, 1984

APRIL 14, 1986

DECEMBER 9, 1991

Mendocino County Department of Planning and Building Services  
Office: 589 Low Gap Road  
Mail: Courthouse  
Ukiah, CA 95482



HOUSING ELEMENT  
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## INTRODUCTION

### Background

The 1981 Housing Element of the Mendocino County General Plan was prepared by the Mendocino County Planning Department in consultation with fourteen Citizen Advisory Committees, approved by the Planning Commission and adopted by the Board of Supervisors on September 24, 1981. The California Department of Housing and Community Development reviewed the adopted Housing Element and determined that the document met the intent of Government Code Section 65302(c) and was adequate under the 1977 Housing Element Guidelines.

The 1981 Housing Element complies with State Planning Law until January 1, 1986, by which time the first of a series of periodic reviews and revisions are required of local governments according to the requirements of Government Code Sections 65302(c) and 65580 et. seq.

### Intent and Purposes

The purpose of the Mendocino County Housing Element is to document the level and scope of housing problems and needs in the community and to establish goals, policies, implementation measures and programs, as well as quantified objectives to address the needs of all economic segments of the population who reside in the unincorporated area of Mendocino County.

In 1980, the California State Legislature amended Section 65302(c) of the Government Code, establishing more detailed legal requirements for the Housing Element of the General Plan. Under the new law, a Housing Element must consist of:

1. An assessment of housing needs and an inventory of resources and constraints relevant to the meeting of those needs.
2. A statement of the community's goals, quantified objectives, and policies relative to the maintenance, improvement, and development of housing.
3. A program which sets forth a five year schedule of actions the local government is undertaking or intends to undertake to implement the policies and achieve the goals and objectives of the Housing Element.

The Mendocino County Housing Element, as revised, includes an analysis of housing needs, a statement of goals, policies and quantified objectives for new construction, rehabilitation and conservation over a five-year period of time from 1986 to 1992. The 1986 Housing Element, as adopted by the Board of Supervisors, will amend and supersede the 1981 Housing Element. It reestablishes county housing goals, policies, implementation measures and programs, and objectives relevant to the housing needs of the unincorporated area of Mendocino County for the period 1986 to 1992.



## Citizen Participation

The initial draft of the 1986 revised Housing Element was prepared jointly by the Community Development Commission of Mendocino County and the Department of Planning and Building Services. Upon completion of the initial draft, copies will be made available to interested persons and agencies for review and comment. Notice of the availability of the draft will also be provided by newspaper. Following the review period the Draft Housing Element will be scheduled for a public hearing by the Planning Commission at which the draft, written comments and public testimony will be considered. The recommendation of the Planning Commission will be submitted to the Board of Supervisors who will also hold public hearings to consider the draft element and hear additional testimony prior to any modifications and final adoption.

## POPULATION

### Growth Trends

During the 1970's, the population of Mendocino County changed dramatically in size, geographical distribution and composition. Between 1970 and 1980, the population of the County grew from 51,101 to 66,738, or 30.6 percent, with most of the growth in the unincorporated area. During the decade, the population of the cities increased by 26.7 percent while that of the unincorporated area increased by 40.9 percent. About 75 percent of the growth was due to in-migration and 25 percent to natural increase.

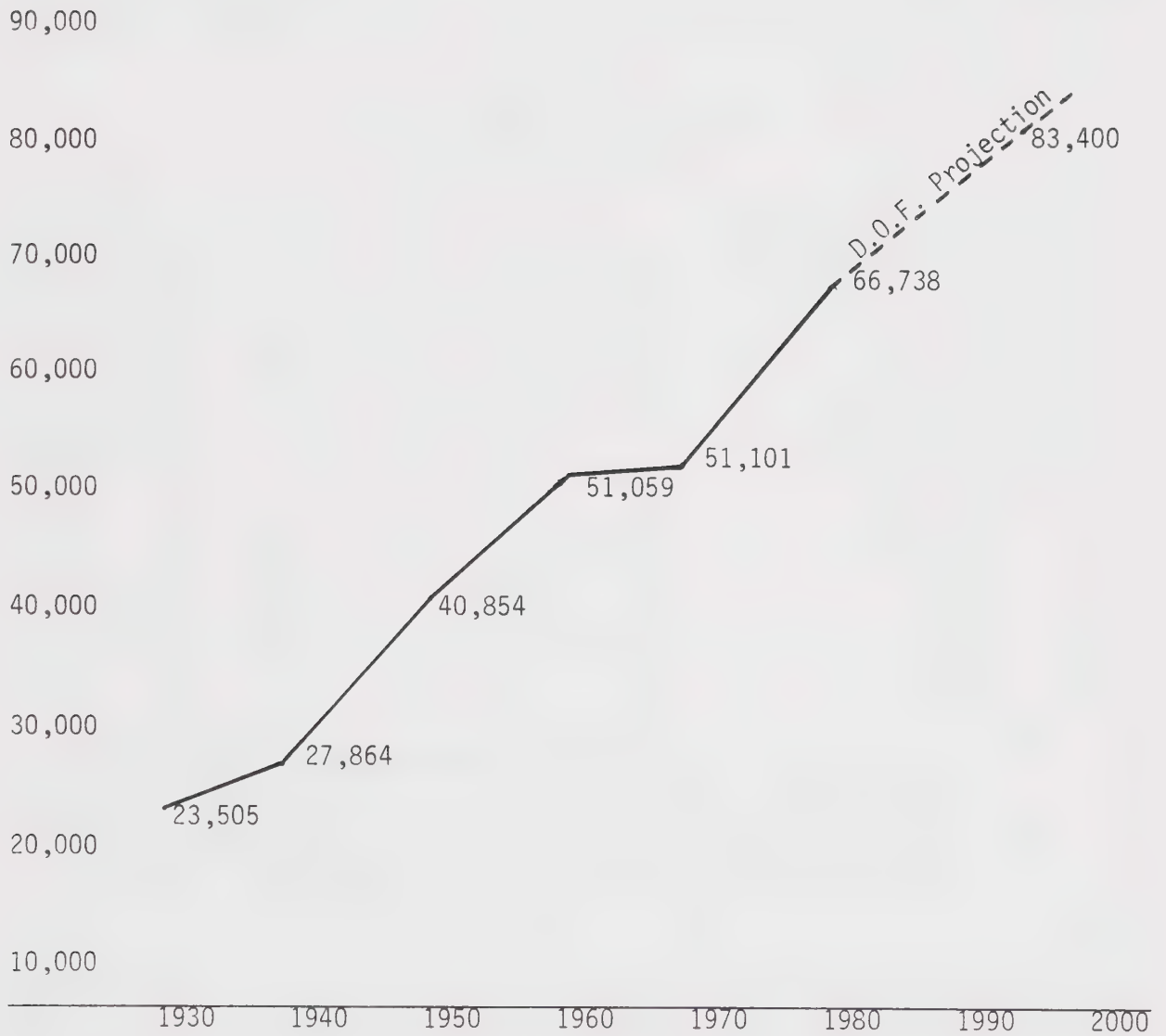
TABLE 1  
POPULATION OF MENDOCINO COUNTY  
AND INCORPORATED CITIES  
1970, 1980 and 1985

	1970 <sup>1</sup>	1980 <sup>2</sup>	1985 <sup>3</sup>
TOTAL COUNTY	51,101	66,738	72,669
UNINCORPORATED	33,036	45,251	49,119
FORT BRAGG	4,455	5,019	5,665
POINT ARENA	424	425	484
UKIAH	10,095	12,035	13,054
WILLITS	3,091	4,008	4,347

1. U.S. Bureau of the Census, 1970 Census of Population, April 1970, revised.
2. U.S. Bureau of the Census, 1980 Census of Population, April 1980.
3. State of California Department of Finance Population Research Unit, Controlled County Population Estimates for 1-1-85, April 26, 1985.

Estimates prepared by the California Department of Finance indicate that for the first five years of the eighties the population growth rate has slowed to about 1.6 percent a year. In contrast with the rural population explosion of the seventies, the annual growth rate of the cities now surpasses that of the unincorporated area. According to Department of Finance projections, a population of 83,400 is expected by July 1, 1992.

FIGURE 1  
MENDOCINO COUNTY  
POPULATION GROWTH



## Population Distribution

The population is centered in the Yokayo Valley, where Ukiah, the largest city and county seat, is located. The County's other major population centers are Fort Bragg and Willits, with 7.8 percent and 6.0 percent of the population, respectively. Although 67.6 percent of Mendocino County's population is located in the unincorporated area, nearly 40 percent is concentrated in the Ukiah vicinity. About 45 percent of the population is dispersed throughout the hinterland, in rural service centers and remote country.

## Age Structure

Between 1970 and 1980, the age distribution of Mendocino County's population changed significantly. The proportion of all inhabitants between the ages of 25 and 34 increased by nearly 6 percent. Over the decade, the number of young adults more than doubled; that increase reflects both earlier episodes of high birth rates and the in-migration of the 1970's. Since most people who become heads of households do so between the ages of 20 and 34, this trend indicates intensified pressure on the housing stock.

As the number of persons in the 15 to 34 age group has increased, so has the number of births. Although the proportion of those between the ages of 35 and 44 grew slightly, the number of persons in that age bracket increased by nearly 40 percent. Migration during the 1970's had little effect on the population between ages 45 and 61. While other age groups increased in number, the 45 to 54 cohort decreased. The number of persons aged 62 and over grew by over a third, but the proportion of elderly persons increased only slightly. The median age slightly increased from 31.4 to 31.6 years.

During the remainder of the 1980's, the proportion of young adults is expected to level off and the highest proportion will shift to the 35 to 44 age groups, reflecting the arrival of the previous decade's young adults. The elderly population will again increase by a third; by 1990 about 15% of the County's population will be 62 or older. Median age is expected to be 34.8 in 1992.

# MENDOCINO COUNTY AGE DISTRIBUTION CHANGE 1970 - 1990

NUMBER OF PERSONS

15000  
14000  
13000  
12000  
11000  
10000  
9000  
8000  
7000  
6000  
5000  
4000  
3000  
2000  
1000  
0

1990 \*\*\*  
1980 \*\*  
1970 \*

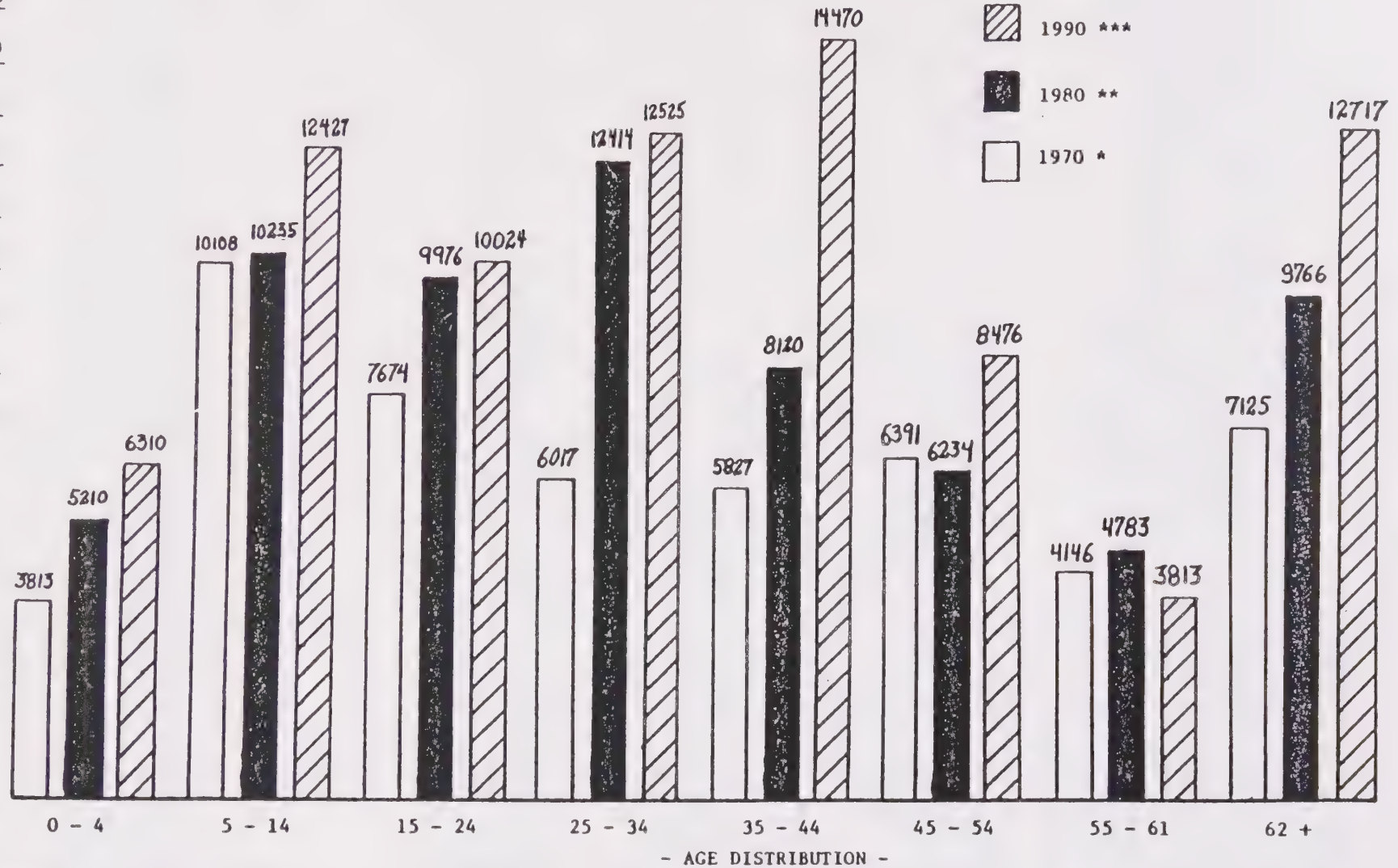


FIGURE 2

DATA SOURCES: \* 1970 Census  
\*\* 1980 Census  
\*\*\* Department of Finance,  
Public Projections Report, 1983



## Race and Ethnicity

Whites comprise the majority of the population -- 92.4 percent. Among the racial minorities, Native Americans (American Indian, Eskimo, Aleut) make up the largest single race, with 2,375 persons or about 46 percent of the minority population. Asian and Pacific Islanders, at 455 was followed by Blacks at 345, Hispanic comprise the largest single ethnic minority, with a total population of 3,688, of whom 1,450 are of "Other" racial origin.

TABLE 2  
POPULATION BY RACE AND ETHNICITY

	MENDOCINO COUNTY	COUNTY UNINCORPORATED	FORT BRAGG	POINT ARENA	UKIAH	WILLITS
White	61,646 (92.4%)	41,709 (92.2%)	4,727 (94.2%)	395 (92.9%)	11,092 (92.2%)	3,723 (92.9%)
Black	345 (0.5%)	243 (0.5%)	3 (0.1%)	4 (0.9%)	89 (0.7%)	6 (0.1%)
Native American	2,375 (3.6%)	1,830 (4%)	69 (1.4%)	19 (4.5%)	363 (3.0%)	94 (2.3%)
Asian/Pacific	455 (0.7%)	274 (0.6%)	15 (0.3%)	1 (0.2%)	141 (1.2%)	24 (0.6%)
Other	1,917 (2.9%)	1,195 (2.6%)	205 (4.1%)	6 (1.4%)	350 (2.9%)	161 (4.0%)
TOTAL	66,738	45,251	5,019	425	12,035	4,008
Hispanic Origin	3,688 (5.5%)	2,462 (5.4%)	320 (6.4%)	17 (4.0%)	635 (5.3%)	254 (6.3%)

SOURCE: U.S. Bureau of the Census, 1980 Census (STF1)

(Note: Persons of Hispanic Origin are counted in "Hispanic Origin" regardless of race. Therefore, the sum of the totals for the five race categories, excluding the total for "Hispanic Origin" adds to total population.)

### Handicapped and Disabled Persons

Handicapped and disabled persons constitute a significant portion of the population. Over ten percent of Mendocino County residents between the working ages of 16 and 64 have a work disability. Furthermore, a very large proportion, 53.5 percent, of those persons are unable to work because of their disability. According to the State Department of Rehabilitation, the largest proportion of handicapped persons in the County have skeletal or muscular disabilities.

TABLE 3  
LABOR FORCE STATUS OF  
PERSONS WITH WORK DISABILITIES  
MENDOCINO COUNTY

LABOR FORCE STATUS	TOTAL
TOTAL WITH A WORK DISABILITY	4,506
IN LABOR FORCE	1,587
NOT IN LABOR FORCE	2,919
PREVENTED FROM WORKING	2,413
NOT PREVENTED FROM WORKING	506
TOTAL WITH NO WORK DISABILITY	37,541

SOURCE: U.S. Bureau of the Census, 1980 Census

TABLE 4  
TYPES OF DISABILITY  
MENDOCINO COUNTY

Skeletal Muscular	2,210	52.26%
Respiratory	330	7.8%
Emotional Problems	290	6.85%
Alcohol/Drug Addiction	270	6.38%
Mental Retardation	240	5.68%
Digestive	140	3.31%
Cardiomuscular	85	2.01%
Neurological	34	0.8%
Blind	50	1.18%
Deaf	40	0.95%
Other Sensory	130	3.07%
Other Conditions	410	9.7%

SOURCE: State of California Department of Rehabilitation



## EMPLOYMENT TRENDS

Services, manufacturing, retail trade and government are major sources of employment in Mendocino County. Table 5 depicts wage and salary employment trends in the County. The largest industrial group, services, has had the most substantial growth over the past decade due to expansion of tourist-oriented establishments, lodging facilities and medical services. During the same period, manufacturing experienced a downward trend largely due to a decline in the lumber and wood products industries.

TABLE 5

### MENDOCINO COUNTY WAGE AND SALARY EMPLOYMENT,<sup>2</sup> 1974 - 1984<sup>1</sup> ANNUAL AVERAGES<sup>3</sup>

	1974		1984		PERCENTAGE CHANGE 1974-1984
	NUMBER	PERCENT	NUMBER	PERCENT	
Total	17,475	100	24,425	100	- - -
Agriculture, Forestry & Fisheries	1,250	7.15	1,475	6.04	- 1.11
Non-Ag Industries	16,225	92.85	22,950	93.96	1.11
Construction & Mining	500	2.86	850	3.48	.62
Manufacturing	4,825	27.61	4,950	20.27	- 7.34
Transportation & Public Utilities	875	5.01	875	3.58	- 1.43
Wholesale Trade	450	2.58	800	3.28	- .70
Retail Trade	2,800	16.02	4,775	19.55	3.53
Finance, Insurance & Real Estate	500	2.86	925	3.79	.93
Services	2,600	14.88	5,175	21.19	6.31
Government <sup>3</sup>	3,650	20.89	4,625	18.94	- 1.95

SOURCE: State of California, Employment Development Department

1. Jobs reported by place of work; does not include self-employed, unpaid family members, domestics or persons involved in trade disputes.
2. Parts may not add to totals due to independent calculation and rounding of annual averages.
3. Includes all civilian employees of federal, state and local government.



Mendocino County has a chronic high unemployment rate. The lowest level of unemployment was 8.7 percent of the labor force in 1979. In 1982 the unemployment rate rose to 15.1 percent as the number of unemployed individuals increased by more than 30 percent over the previous year. While the unemployment rate has declined somewhat since 1982, it continues to exceed both national and state averages.

TABLE 6  
MENDOCINO COUNTY  
CIVILIAN LABOR FORCE, EMPLOYMENT, AND UNEMPLOYMENT  
(MARCH 1984 BENCHMARK)  
ANNUAL AVERAGES

	LABOR FORCE	EMPLOYMENT	UNEMPLOYMENT	UNEMPLOYMENT RATE*
1976	26,150	23,175	2,975	11.4
1977	28,425	25,350	3,075	10.8
1978	29,600	26,950	2,650	9.0
1979	30,450	27,800	2,650	8.7
1980	30,500	27,325	3,175	10.4
1981	31,200	27,500	3,700	11.8
1982	32,100	27,250	4,850	15.1
1983	32,575	28,250	4,325	13.3
1984	32,775	28,925	3,850	11.8

SOURCE: State of California, Employment Development Department

\* Unemployment Rate is based on unrounded data.

The County's basic industries, agriculture, forestry, tourist-oriented retail trade and services, experience wide seasonal fluctuations in employment. For example, in 1984, the January unemployment rate, 16.8 percent, was twice the 8.4 percent unemployment rate of August. This means 2,500 people were without jobs. The unemployment rate is highest during the first three months of the year when between 15 and 20 percent of the labor force is jobless.

TABLE 7  
MENDOCINO COUNTY  
MONTHLY LABOR FORCE, EMPLOYMENT, AND UNEMPLOYMENT, 1984

1984	LABOR FORCE	EMPLOYMENT	UNEMPLOYMENT	UNEMPLOYMENT RATE*
JANUARY	32,050	26,650	5,400	16.8
FEBRUARY	32,300	27,050	5,250	16.3
MARCH	32,175	27,375	4,800	14.9
APRIL	31,850	27,900	3,950	12.4
MAY	31,800	28,625	3,175	10.0
JUNE	33,050	30,075	2,975	9.0
JULY	33,750	30,175	3,575	10.6
AUGUST	34,525	31,625	2,900	8.4
SEPTEMBER	33,500	30,475	3,025	9.1
OCTOBER	33,400	30,650	2,750	8.2
NOVEMBER	33,075	28,750	4,325	13.1
DECEMBER	31,875	27,775	4,100	12.8

SOURCE: State of California, Employment Development Department

\* Unemployment Rate is based on unrounded data.

According to the California Employment Development Department, wage and salary employment will expand by 1,150 jobs through December 1986. Retail trade and services will experience the most sizable growth. Without a decrease in interest rates, resurgence of the timber industry is unlikely. The unemployment rate is expected to remain unchanged in 1985 and to edge up slightly by the end of 1986. Employment opportunities in Mendocino County will be favorable for individuals with specialized skills and experience. Competition will be keen for the inexperienced or marginally qualified jobseeker.



## HOUSEHOLD CHARACTERISTICS

A household is any person or group of persons, related or unrelated, occupying a housing unit as the place of residence. A survey of household characteristics is useful in assessing housing needs.

### Average Household Size and Composition

Although the population of Mendocino County increased by 30.6 percent between 1970 and 1980, the number of households increased by 53.3 percent, implying a trend toward smaller households. Indeed, the average household size decreased from 2.938 to 2.579 over the decade.

The California Department of Finance estimates the average household size has increased slightly since 1980, but projects a decrease by 1992 to an average of 2.574 persons per household.

TABLE 8

### MENDOCINO COUNTY HOUSEHOLDS

	1970	1980	1985 (est.)	1992 (proj.)
Households	16,538	25,352	27,454	32,400
Average Size of Households	2.938	2.579	2.596	2.574

SOURCES: U. S. Bureau of the Census  
California Department of Finance

All other things being equal, one might expect a trend toward smaller households implies more demand for smaller dwellings. However, that expectation is not reinforced by household composition in the unincorporated area where there is a higher proportion of family households except for female headed households. Accordingly the average household size is larger in the unincorporated area than in the incorporated area, 2.653 compared to 2.484.

TABLE 9  
HOUSEHOLD TYPE AND PRESENCE OF CHILDREN

HOUSEHOLD COMPOSITION	TOTAL COUNTY		UNINCORPORATED AREA		INCORPORATED AREA	
	Number	Percentage	Number	Percentage	Number	Percentage
Married Couple with Children	7,397	29.2	5,205	30.9	2,192	25.8
Married Couple without Children	7,787	30.7	5,435	32.2	2,352	27.7
Male Householder, no Spouse, with Children	521	2.0	374	2.2	147	1.7
Male Householder, no Spouse, without Children	295	1.2	194	1.2	101	1.2
Female Householder, no Spouse, with Children	1,526	6.0	868	5.1	658	7.8
Female Householder, no Spouse, without Children	676	2.7	333	2.0	343	4.1
Non-Family Household	7,150	28.2	4,458	26.4	2,692	31.7
Total	25,352	100.0	16,867	100.0	8,485	100.0

SOURCE: U.S. Bureau of Census, 1980 Census

### Income

The structure of the job market, high unemployment, and a large proportion of elderly, disabled and handicapped households living on limited fixed incomes contribute to a relatively low median income for Mendocino County. According to the 1980 Census, the median household income was \$15,013; for the 1979 tax year, Mendocino ranked 34th among California Counties. The distribution of households by income categories is shown in Table 10.



TABLE 10

## MENDOCINO COUNTY HOUSEHOLD INCOME, 1979

HOUSEHOLD INCOME	NUMBER OF HOUSEHOLDS	
	UNINCORPORATED	TOTAL COUNTY
\$ 0 - 2,499	846	1154
2,500 - 4,999	1460	2571
5,000 - 7,499	1682	2499
7,500 - 9,999	1520	2285
10,000 - 12,499	1594	2289
12,500 - 14,999	1261	1867
15,000 - 17,499	1399	2108
17,500 - 19,999	1224	1872
20,000 - 22,499	1155	1777
22,500 - 24,999	939	1371
25,000 - 27,499	866	1259
27,500 - 29,999	548	770
30,000 - 34,999	885	1325
35,000 - 39,999	453	713
40,000 - 49,999	492	738
50,000 - 74,999	337	516
75,000 or more	206	238
MEDIAN	\$15,126	\$15,013

SOURCE: U.S. Bureau of the Census, 1980 Census

Both State and Federal Governments combine households into income groups based on the relationship of their income (often adjusted for family size) to the median income of the jurisdiction. These income groups are used to determine needs and beneficiaries of various programs.

TABLE 11  
DISTRIBUTION OF HOUSEHOLDS BY INCOME GROUP

	INCOME GROUP (% of County Median)	1983 HOUSEHOLDS
Mendocino County Unincorporated Area	Very Low (less than 50%)	4,215 (23.8%)
	Lower (50% to 80%)	2,949 (16.7%)
	Moderate (80% to 120%)	4,037 (22.86%)
	Above Moderate (over 120%)	<u>6,459</u> (36.57%)
	Total	17,660 (100%)
County Total	Very Low	6,655 (25%)
	Lower	4,259 (16%)
	Moderate	6,123 (23%)
	Above Moderate	<u>9,584</u> (36%)
	Total	26,621 (100%)

SOURCE: Mendocino Council of Governments, Mendocino County Housing Needs Plan, Revised August, 1985.

Government agencies also utilize income guidelines adjusted for family size for analytical and program purposes. These income guidelines are periodically updated, usually on an annual basis. The current Mendocino County income limits are included in Table 12.

TABLE 12

1984 INCOME LIMITS, BY HOUSEHOLD SIZE FOR  
INCOME CATEGORIES USED IN FEDERAL AND STATE  
HOUSING PROGRAMS

NUMBER OF PERSONS	UPPER LIMIT OF ANNUAL GROSS INCOME			
	VERY LOW	LOWER	MEDIAN	MODERATE
1	8,050	12,900	16,100	19,300
2	9,200	14,700	18,400	22,100
3	10,350	16,550	20,700	24,850
4	11,500	18,400	23,000	27,600
5	12,400	19,550	24,450	29,350
6	13,350	20,700	25,900	31,050
7	14,250	21,850	27,300	32,800
8+	15,200	23,000	28,750	34,500

SOURCE: California Department of Housing and Community Development,  
Income Limits, July 23, 1984.

### Female Headed Households

Female heads of households made up 2,202 or 12.1 percent of the total families in Mendocino County in 1980. In the unincorporated area 1,201 or 9.7 percent of families were female headed households. A high proportion of female headed households had incomes below the poverty level: 28.5 percent of this group were living below the poverty level compared to a total family level of 9.5 percent below poverty; 30.7 compared to 9.2 percent in the unincorporated area.

TABLE 13  
FAMILY/FEMALE HOUSEHOLDER INCOME<sup>1</sup> ANALYSIS

	UNINCORPORATED AREA		MENDOCINO COUNTY	
	NUMBER	PERCENT	NUMBER	PERCENT
Above Poverty Families With Female Head	11,269 832	100% 7.4%	16,476 1,576	100% 9.6%
Below Poverty Families With Female Head	1,140 369	100% 32.4%	1,726 627	100% 36.3%
Total Families With Female Head	12,409 1,201	100% 9.7%	18,202 2,202	100% 12.1%

SOURCE: U.S. Bureau of the Census, 1980 Census

1. 1979 Income

### Elderly Households

In 1980 there were 5,225 householders aged 65 and over living in Mendocino County, 2,974 of which resided in the unincorporated area. Although the incidence of poverty among those over age 65 is not quite as high as that of those below age 65 (11.1% compared to 12.6%), there is a significant number of elderly householders (646 or 12.4%) with incomes just above the poverty level. This means that about one-fourth of elderly householders in Mendocino County live either below or on the fringe of poverty.

TABLE 14  
ELDERLY HOUSEHOLDER INCOME<sup>1</sup> ANALYSIS

AGE OF HOUSEHOLDER	UNINCORPORATED AREA		TOTAL COUNTY	
	FAMILIES	NONFAMILIES	FAMILIES	NONFAMILIES
Below Poverty				
15 - 64	1,059	771	1,548	996
65+	81	233	178	403
Between 100 & 124% of Poverty				
15 - 64	492	214	695	435
65+	99	266	118	528
125% of Poverty & Above				
15 - 64	8,993	2,151	13,097	3,356
65+	1,685	823	2,566	1,432

SOURCE: U.S. Bureau of the Census, 1980 Census

1. 1979 Income





## HOUSING CHARACTERISTICS

### The Housing Inventory in 1980

According to the decennial census, there were 28,998 housing units in Mendocino County in 1980; 20,052 units were located in the unincorporated area. About 25,072 units were occupied, and 3,145 were vacant.

Table 15 shows how these dwellings were distributed by type of structure. Over two-thirds were single-family detached dwellings. Attached units, duplexes and small multi-unit structures accounted for about 10 percent, and larger multi-unit structures accounted for another 10 percent of the total. More than 14 percent of all dwellings were mobile homes.

TABLE 15  
STRUCTURAL CHARACTERISTICS OF MENDOCINO COUNTY'S  
HOUSING INVENTORY : 1980

TYPE OF STRUCTURE	YEAR - ROUND HOUSING UNITS				VACANT SEASONAL & MIGRATORY UNITS
	TOTAL	VACANT	OWNER OCCUPIED	RENTER OCCUPIED	
1 Unit, Detached	18,238	1,949	11,927	4,362	516
1 Unit, Attached	439	36	130	273	5
2 Units	963	128	307	528	21
3-4 Units	1,570	199	394	977	50
5 + Units	2,955	357	487	2,111	79
Mobile Home	3,990	414	2,851	725	172
All Types	28,155	3,083	16,096	8,976	843

SOURCE: U.S. Bureau of the Census, 1980 Census (STF 3).

NOTE: The totals by occupancy status are based on complete counts; however, the details by type of structure were estimated from sample counts, so the total for all types does not correspond to the complete count total for year-round housing units.

Despite the recent surge of condominium development in urban areas, condominiums are a negligible feature in the Mendocino County housing inventory - less than two-tenths of one percent of the total. About 75 percent of the owners live in single-family detached houses, the traditional form of owner-occupancy. Over 17 percent live in mobile homes. Approximately one-third of all occupied mobile homes were located in mobile-home parks in the unincorporated area of the County.

Nearly half of all rented dwellings are also single-family detached houses. About a fifth of the rented dwellings are multi-unit structures that contain less than five units. Almost a fourth of the rented dwellings are in structures containing five or more units, over half of which are located in the incorporated cities.

TABLE 16

TOTAL  
MENDOCINO COUNTY HOUSING INVENTORY CHARACTERISTICS : 1980

HOUSING UNITS	TOTAL YEAR-ROUND	VACANT	TOTAL	OCCUPIED OWNER	RENTER
Single Family	18,238 100%	1,949 10.7%	16,289 89.3%	11,927 73.2%	4,362 26.8%
Multiple Family	5,927 100%	720 12.2%	5,207 87.5%	1,318 25.3%	3,889 74.7%
Mobile Home	3,990 100%	414 10.3%	3,576 89.6%	2,851 79.7%	725 20.3%
Total	28,155 100%	3,083 11.0%	25,072 89.0%	16,096 64.2%	8,976 35.8%

SOURCE: U. S. Bureau of the Census, 1980 Census

TABLE 17

## UNINCORPORATED

## MENDOCINO COUNTY HOUSING INVENTORY CHARACTERISTICS : 1980

HOUSING UNITS	TOTAL YEAR-ROUND	VACANT	TOTAL	OCCUPIED OWNER	RENTER
Single Family	12,661 100%	1,659 13.1%	11,002 86.9%	8,107 73.7%	2,895 26.3%
Multiple Family	3,263 100%	536 16.4%	2,727 83.6%	1,012 37.1%	1,715 62.9%
Mobile Home	3,296 100%	384 11.7%	2,912 88.3%	2,356 80.9%	556 19.1%
Total	19,220 100%	2,579 13.4%	16,641 86.6%	11,475 69.0%	5,166 31.0%

SOURCE: U. S. Bureau of the Census, 1980 Census

As Table 18 shows, the number of housing units in Mendocino County increased over 50% during the 1970's, more than meeting household formation during the decade. Between 1970 and 1980 the housing stock in the unincorporated area increased from 12,271 to 20,052, or by 7,781 units. Despite city annexations and a court imposed moratorium on land divisions and rezoning, the percentage of housing units within the unincorporated area increased by 4.3 percent over the ten year period.

TABLE 18

HOUSING INVENTORY CHANGE, BY AREA IN MENDOCINO COUNTY : 1970 - 1980

AREA	HOUSING UNITS		1970-80 CHANGE	
	1970	1980	NUMBER	PERCENT
Fort Bragg	1,781	2,249	468	26.3
Point Arena	185	223	38	20.5
Ukiah	3,539	4,875	1,336	37.8
Willits	1,138	1,599	461	40.5
Total Incorporated	6,643	8,946	2,303	34.7
Unincorporated	12,271	20,052	7,781	63.4
Total County	18,914	28,998	10,084	53.3

SOURCE: U. S. Bureau of the Census, 1970 Census and 1980 Census

#### Building and Demolition Permit Activity

The number of permits issued for residential units in the unincorporated area of the County has declined each year except one since 1980. In 1980 permits were issued for 666 dwelling units; in 1981, 496; in 1982, 340; in 1983, 397; and in 1984, 393. During the first half of 1985, permits were issued for 218 units. The most significant drop occurred from 1980 to 1982. Since 1982 the number of permits issued for residential units each year has remained relatively constant.

Between the beginning of 1980 and the middle of 1985 there were 59 demolition permits issued within the unincorporated area of the County, 21 of which were for residential buildings.



Building permit information for the coastal zone prior to 1983 is not readily available. Mendocino County maintains an office of the Planning and Building Services Department in Fort Bragg on the coast. The coastal office handles planning and building applications for an area of the county extending considerably further inland than the coastal zone. Prior to 1983 permit information is only available for the entire area of the County served by the coastal office. No log was maintained identifying permits within the coastal zone. To obtain the data shown in Table 19 for the years 1980-1982 it would be necessary to review each permit application and compile the information. Staff time to perform this task has not been available.

Table 20 shows that 145 housing units were approved for construction in the coastal zone between the beginning of 1983 and the middle of 1985, and that no residential buildings were approved for demolition. Only one residence was converted to a non-residential use.

TABLE 19  
MENDOCINO COUNTY BUILDING PERMITS  
(Includes Coastal Zone)

	1980	1981	1982	1983	1984	1985 <sup>9</sup>
Single Family Dwellings	425	329	252	288	283	167
Multiple Family Dwellings	10 <sup>3</sup>	20 <sup>4</sup>	3 <sup>5</sup>	11 <sup>6</sup>	14 <sup>7</sup>	11 <sup>8</sup>
Mobile Homes & Mfd. Homes	187	95	82	79	51	29
(Residential Unit Subtotal)	(666)	(496)	(340)	(397)	(393)	(218)
Residential Addns - Remodels & Accessory Bldgs.	853	722	691	584	565	360
Comm. & Ind.	41	50	26	37	40	34
Commercial Addns, Remodels & Accessory Bldgs	50	75	77	68	81	48
Conversion of Residential Unit To Non-Residential Use <sup>1</sup>						
Demolitions	4	5	5	14	19	12
Others <sup>2</sup>	9		11	9	3	4
TOTAL	1579	1296	1147	1090	1056	665

SOURCE. Compiled from Planning & Building Services monthly Building Inspection Department Activity Report by Planning & Building Services Staff, August 1985.

1. The monthly Building Inspection Department Activity Reports do not identify conversions.
2. Others includes grading permits, transfers of ownership and ponds.
3. Fifty-four dwelling units.
4. Seventy-two dwelling units.
5. Six dwelling units.
6. Thirty dwelling units.
7. Fifty-nine dwelling units.
8. Twenty-two dwelling units.
9. January through July only.

TABLE 20

## COASTAL ZONE BUILDING PERMITS

	1980	1981	1982	1983	1984	1985 <sup>9</sup>
Single Family Dwellings	Not Available			53 <sup>1</sup>	43	38
Multiple Family Dwellings	Not Available			0	0	0
Mobile Homes & Mfd. Homes	Not Available			2	8	1
(Residential Unit Subtotal)				(55)	(51)	(39)
Residential Addns., Remodels & Accessory Bldgs.	Not Available			113	118	52
Comm. & Ind.	Not Available			4	8	0
Commercial Addns., Remodels & Accessory Bldgs.	Not Available			25	38	12
Conversion of Residential Unit to Non-Residential Use	Not Available			1 <sup>4</sup>	0	0
Demolitions	Not Available			1 <sup>3</sup>	4 <sup>5</sup>	0
Others	Not Available			0	0	0
TOTALS				199	219	103

SOURCE: Compiled from Preliminary Approval Log and Coast Office Building Permit Log by Planning & Building Services Staff, September 1985.

1. Two single family dwelling permits were for replacement of existing dwelling units.
2. Through June 10, 1985.
3. 17' x 26' framed building.
4. Conversion of residence to inn.
5. None of the demolished structures were residences.

## Vacancy

In April, 1980 there were 3,145 unoccupied year-round housing units in Mendocino County, compared with 2,227 in 1970. Although the number of vacant dwellings increased, vacancies decreased as a proportion of the inventory; the gross vacancy rate declined from 11.8 to 11.1 percent County wide. In 1980 the unincorporated area had 2,643 unoccupied housing units; the gross vacancy rate was 13.6 percent.

The gross vacancy rate is merely the number of vacant year-round dwellings divided by the sum of occupied and vacant year-round dwellings; it is the most general measure of inventory utilization. Table 21 gives additional detail about vacant dwellings in 1980. In the unincorporated area about 25 percent were available for rent or sale at the time of census enumeration. Roughly 48 percent were held by their owners for occasional use such as vacation homes; and another 27 percent were rented or sold but awaiting occupancy, undergoing renovation, tied up in probate or otherwise unavailable for occupancy.

TABLE 21  
MENDOCINO COUNTY VACANCY STATUS, 1980

	TOTAL COUNTY	UNINCORPORATED AREA
Total Housing Units	28,998	19,298
Vacant Housing Units	3,145	2,643
For Sale Only	351	263
For Rent	587	391
Rented or Sold, Awaiting Occupancy	299	---
Held for Occasional Use	1,324	1,274
Other Vacant	584	715*

SOURCE: U.S. Bureau of the Census, 1980 Census.

\* Includes units rented or sold, awaiting occupancy.

Table 22 shows the conventional vacancy rate for Mendocino County in 1970 and 1980. The conventional rates are computed by the Bureau of the Census separately for rental and homeowner dwellings. They count a dwelling vacant only if it is available for rent or sale at the time of enumeration. Dwellings available for either rent or sale are counted as rental vacancies. Comparing conventional vacancy rates for 1970 and 1980, we see that both homeowner and rental vacancies significantly decreased County wide. The conventional vacancy rate is slightly higher in the unincorporated area.

TABLE 22  
MENDOCINO COUNTY CONVENTIONAL VACANCY RATES  
1970 - 1980

	TOTAL COUNTY		UNINCORPORATED AREA
	1970	1980	1980
Homeowner Vacancy Rate	4.4%	2.1%	2.2%
Rental Vacancy Rate	21.9%	6.1%	7.5%

SOURCE: U.S. Bureau of the Census, 1970 Census and 1980 Census.

### Tenure

Between 1970 and 1980 the number of owner households increased by 53 percent (as compared to 49 percent for renter households) in Mendocino County. In the unincorporated area 68.8 percent of occupied housing units were owner occupied in 1980, compared to 64.2 percent for the total County. Of the 8,976 renter households in the County, 5,192 or 31.2 percent were located in the unincorporated area. This tenure pattern indicates that the unincorporated area of Mendocino County enjoys a higher rate of homeownership than both the State and Nation.

TABLE 23  
MENDOCINO COUNTY HOUSING TENURE, 1980

	TOTAL	OWNERS	RENTERS
Unincorporated Area	16,655	11,463 (68.8%)	5,192 (31.2%)
Total County	25,072	16,096 (64.2%)	8,976 (35.8%)

SOURCE: U.S. Bureau of the Census, 1980 Census.

### Overcrowding

The U.S. Bureau of the Census defines overcrowding as more than one person per room in a housing unit. In 1980, the unincorporated area of Mendocino County showed a slightly higher proportion of overcrowded housing units than the total County, 7.82 percent compared to 6.5 percent, or approximately the same rate of overcrowding as the State wide average. More than 1,300 households live in overcrowded conditions. As Table 24 shows, overcrowding is a more serious problem for renter households. In 1980, one in nine renter households lived in overcrowded housing conditions. Decreasing housing production and increasing housing costs lead to a higher incidence of overcrowding.

TABLE 24  
OVERCROWDING, 1980  
MENDOCINO COUNTY UNINCORPORATED AREA

	TOTAL UNITS	OWNER OCCUPIED	RENTER OCCUPIED
Total	16,655	11,463	5,192
Overcrowded	1,303	732	571
Percent Overcrowded	7.82%	6.39%	11.0%

SOURCE: U.S. Bureau of the Census, 1980 Census



## Unit Size

In analyzing the overall housing picture in the County, a comparison of the number of persons per housing unit and the number of rooms in existing structures is useful for identifying the unit sizes in greatest demand. This information can provide the County with an indication of the types of new units that should be built in the future to meet community needs.

TABLE 25  
HOUSING UNITS BY NUMBER OF BEDROOMS, 1980  
MENDOCINO COUNTY UNINCORPORATED AREA

YEAR ROUND HOUSING UNITS		
BEDROOMS	NUMBER	PERCENT
None	873	4.5%
1	3,739	19.4%
2	7,047	36.6%
3	6,264	32.6%
4	1,135	5.9%
5+	174	.9%
Total	19,232	99.9%*

SOURCES: U.S. Bureau of the Census, 1980 Census.  
City of Point Arena, Housing Element, 1985.

\* Error due to rounding.

TABLE 26  
PERSONS IN HOUSING UNITS, 1980  
MENDOCINO COUNTY UNINCORPORATED AREA

	NUMBER	PERCENT
Occupied Housing Units	16,655	100%
1 Persons	3,499	21.0%
2 Persons	5,971	35.9%
3 Persons	2,852	17.1%
4 Persons	2,498	15.0%
5 Persons	1,086	6.5%
6 or more Persons	749	4.5%

SOURCE: U.S. Bureau of the Census, 1980 Census.

The mean number of 2.66 persons per unit in the unincorporated area compared to 2.27 persons County wide suggests larger than average families tend to reside outside of the cities. The U.S. Census indicates the largest proportion of housing units in the unincorporated area, over two-thirds, have two or three bedrooms. The distribution of unit sizes and numbers of persons per unit correspond to a great degree, with the notable exception of very large families (six or more persons). Although the gap between the number of available large units (four or more bedrooms) and very large families is not great, development of additional large units should not be discouraged.



## HOUSING CONDITIONS

Compared with housing in California on the whole, the Mendocino County unincorporated area housing inventory is quite young. Table 27 shows that over a half of all dwellings in the unincorporated area were built between 1960 and 1980, and only 15 percent predate World War II. However, owner-occupied and rented dwellings differ considerably as to vintage. Renter occupied dwellings tend to be older. Among vacant dwellings, a considerable proportion were recently built, due partly to the lag time between rental or sale and occupancy, and partially to market conditions at the end of the decade.

TABLE 27  
AGE OF MENDOCINO COUNTY DWELLINGS, 1980  
(UNINCORPORATED AREA)

YEAR BUILT	TOTAL YEAR-ROUND DWELLINGS	VACANT DWELLINGS	OCCUPIED DWELLINGS	
			OWNER OCCUPIED	RENTER OCCUPIED
N U M B E R O F D W E L L I N G S				
1979 - March 1980	1,259	314	767	178
1975 - 1978	3,028	440	2,098	490
1970 - 1974	2,928	307	2,009	612
1960 - 1969	3,673	406	2,415	852
1950 - 1959	3,479	412	1,819	1,248
1940 - 1949	1,911	264	954	693
1939 or earlier	2,929	436	1,400	1,093
Total	19,207	2,579	11,462	5,166
P E R C E N T A G E D I S T R I B U T I O N				
1979 - March 1980	6.6	12.2	6.7	3.4
1975 - 1978	15.8	17.1	18.3	9.5
1970 - 1974	15.2	11.9	17.5	11.9
1960 - 1969	19.1	15.7	21.1	16.5
1950 - 1959	18.1	16.0	15.9	24.2
1940 - 1949	10.0	10.2	8.3	13.4
1939 or earlier	15.2	16.9	12.2	21.1
Total	100.0	100.0	100.0	100.0

SOURCE: U. S. Bureau of the Census, 1980 Census (STF 3)

Although Mendocino County's housing stock is relatively new, deterioration is nevertheless a significant factor affecting housing quality. In addition to the normal aging process, severe weathering, faulty original construction, and low maintenance borne of low incomes have taken their toll of the County's housing.

A thorough survey of housing conditions has not been conducted in the unincorporated area due to its vastness, inaccessibility, and hazards associated with certain agricultural operations. However, limited "windshield" surveys conducted by Staff found substandard housing units dispersed throughout the County.

According to the 1982 California Housing Plan, Mendocino County had 5,310 units needing rehabilitation and 3,270 units needing replacement. After deducting the estimated rehabilitation and replacement needs of the incorporated cities, roughly 3,130 units need replacement and between 3,320 and 4,590 units need repair in the unincorporated area. This means an estimated 16 percent of the housing stock needs replacement and between 17 and 23 percent need rehabilitation. If units needing repair are not rehabilitated, there is a risk that these units may deteriorate until they become dilapidated and eventually leave the housing inventory.

#### Housing Costs and Affordability

When the U. S. Census was conducted in 1980, the median house value was \$70,200 with the majority of units selling between \$60,000 and \$80,000.

TABLE 28

#### MENDOCINO COUNTY HOUSING UNIT<sup>1</sup> VALUE - 1980

VALUE	NUMBER	PERCENTAGE
Less than \$10,000	78	.8%
\$10,000 to \$14,999	111	1.1%
\$15,000 to \$19,999	134	1.4%
\$20,000 to \$24,999	229	2.3%
\$25,000 to \$29,999	244	2.5%
\$30,000 to \$34,999	281	2.9%
\$35,000 to \$39,999	289	3.0%
\$40,000 to \$49,999	793	8.1%
\$50,000 to \$59,999	1,259	12.9%
\$60,000 to \$79,999	2,892	29.5%
\$80,000 to \$99,999	1,758	17.9%
\$100,000 to \$149,999	1,245	12.7%
\$150,000 to \$199,999	308	3.1%
\$200,000 or More	173	1.8%
TOTAL	9,794	100.0%
MEDIAN HOUSING VALUE: \$70,200		

SOURCE: U.S. Bureau of the Census, 1980 Census

1. Specified owner - occupied housing units.



A profile of rents in 1980 shows that the median contract rent was \$209 per month, excluding utilities. Most of the rental units were priced in the \$200 to \$300 range.

TABLE 29

MENDOCINO COUNTY MONTHLY CONTRACT RENT - 1980

MONTHLY RENT	NUMBER	PERCENTAGE
Less than \$50	216	2.7%
\$50 to \$59	143	1.8%
\$60 to \$79	318	4.0%
\$80 to \$99	281	3.5%
\$100 to \$119	515	6.4%
\$120 to \$149	524	6.6%
\$150 to \$169	691	8.6%
\$170 to \$199	638	8.0%
\$200 to \$249	1,511	19.0%
\$250 to \$299	1,303	16.3%
\$300 to \$349	549	6.9%
\$350 to \$399	355	4.4%
\$400 to \$499	191	2.4%
\$500 and up	54	.7%
No Cash Rent	694	8.7%
TOTAL	7,983	100.0%
MEDIAN MONTHLY CONTRACT RENT: \$209		

SOURCE: U.S. Bureau of the Census, 1980 Census

Housing costs in Mendocino County have increased dramatically since 1970. The median value of a home in 1980 was 401% more than the median value of a home in 1970. Rents have also increased rapidly since 1970. Between 1970 and 1980, the median rent increased 299%. Median family income in Mendocino County has not kept up with the increases in housing costs as Table 30 shows.

TABLE 30

INCREASE IN HOUSING VALUE, RENT AND  
HOUSEHOLD INCOME, 1970 - 1980  
MENDOCINO COUNTY

	1970	1980	PERCENT INCREASE 1970-1980
Median Value Home	\$17,499	\$70,200	401%
Median Rent	\$ 70	\$ 209	299%
Median Family Income	\$ 8,868	\$17,695	200%

SOURCE: U.S. Bureau of the Census, 1970 Census and  
1980 Census

Inflation in housing prices was especially acute in the latter 1970's. However, the increase in conventional home prices moderated considerably between 1980 and 1984 as Table 31 indicates. In 1984, the average sales price was about \$73,000.

The average sales price of mobile homes is about \$30,000 (\$34,000 with foundation).

The average cost of owner-built homes is difficult to estimate because production variables such as financing, land costs, environmental constraints, infrastructure costs, and individual skill are as diverse as the number of owner builders. All relevant factors remaining unaltered, owner-built homes can generally be constructed at a lower cost than conventionally built housing.

TABLE 31

MENDOCINO COUNTY  
AVERAGE SALES PRICE OF SINGLE-FAMILY  
DWELLINGS - 1984

NUMBER OF BEDROOMS	NUMBER OF UNITS	AVERAGE SALES PRICE
2	50	\$59,310
3	71	\$75,654
4	19	\$89,642
1984 AVERAGE SALES PRICE		\$73,112

SOURCE: Mendocino County Board of Realtors.

Although housing prices have stabilized somewhat, rental prices have continued to rise. For example, in 1984 the average monthly rent for available two-bedroom apartments was \$312 inland, and \$369 on the coast, while the average monthly rent for available two-bedroom houses was \$366 inland and \$465 on the coast. Rental units, especially three and four-bedrooms, are more costly and less available on the coast.

TABLE 32

## AVERAGE RENTS IN MENDOCINO COUNTY - 1984

	AVERAGE RENT	AVERAGE MONTHLY RANGE	NUMBER OF UNITS
<u>COAST</u> <sup>1</sup>			
<u>Apartment Size</u>			
0 Bedroom	\$273	\$243 - \$321	36
1 Bedroom	\$310	\$220 - \$383	36
2 Bedroom	\$369	\$313 - \$550	69
3 Bedroom	\$499	\$400 - \$675	5
<u>Houses</u>			
0 Bedroom	\$254	\$218 - \$280	39
1 Bedroom	\$365	\$292 - \$488	42
2 Bedroom	\$465	\$382 - \$678	90
3 Bedroom	\$513	\$350 - \$611	52
4 Bedroom	\$656	\$500 - \$750	12
<u>INLAND</u> <sup>2</sup>			
<u>Apartment Size</u>			
0 Bedroom	\$200	\$163 - \$238	43
1 Bedroom	\$257	\$235 - \$280	77
2 Bedroom	\$312	\$297 - \$324	126
3 Bedroom	\$458	\$350 - \$525	19
<u>Houses</u>			
0 Bedroom	\$250	\$175 - \$350	20
1 Bedroom	\$261	\$195 - \$300	21
2 Bedroom	\$366	\$328 - \$399	102
3 Bedroom	\$487	\$417 - \$555	118
4 Bedroom	\$627	\$562 - \$690	32

SOURCE: Community Development Commission of Mendocino County Monthly Average Rent Surveys, 1984.

1. Sources: Mendocino Beacon and Fort Bragg Advocate.
2. Sources: Willits News and Ukiah Daily Journal.

Twenty-five percent (25%) and 30% are the limits set by State and Federal government agencies, respectively, as the proportion of its monthly income a household should reasonably be expected to pay for housing costs. In terms of ability to pay (assuming 25% of income is spent on shelter costs), this means a \$15,000 a year household can pay \$312 a month for shelter.

According to the U. S. Census, a majority of renters (60%) having annual incomes below \$15,000 were paying 25% of their income for rent while 13.2% of those having annual incomes over \$15,000 were overpaying.

TABLE 33  
MENDOCINO COUNTY HOUSEHOLD INCOME BY GROSS  
RENT AS A PERCENT OF INCOME  
(UNINCORPORATED AREA)

RENT AS PERCENT OF INCOME	INCOME				
	0 to \$4,999	\$5,000 to \$9,999	\$10,000 to \$14,999	\$15,000 to \$19,999	\$20,000+
0-19%	24	101	247	353	553
20-24%	6	105	147	111	25
25-34%	77	209	349	103	73
35+%	511	409	157	7	0
Not Computed	279	149	83	85	68

SOURCE: U.S. Bureau of the Census, 1980 Census.

Among homeowners, 46.3% of homeowner households having incomes below \$15,000 annually were paying more than 25% of their incomes for housing while 20.2% in the \$20,000+ range were overpaying.



TABLE 34

MENDOCINO COUNTY HOUSEHOLD INCOME BY SELECTED  
MONTHLY COSTS AS PERCENT OF INCOME  
(UNINCORPORATED AREA)

OWNER COSTS AS PERCENT OF INCOME	INCOME				
	0 to \$4,999	\$5,000 to \$9,999	\$10,000 to \$14,999	\$15,000 to \$19,999	\$20,000+
0-19%	121	396	439	532	2,024
20-24%	72	71	61	51	345
25-34%	63	146	162	201	261
35+%	284	254	151	114	170
Not Computed	71	0	0	0	0

SOURCE: U.S. Bureau of the Census, 1980 Census.

In 1984, Community Development Commission staff estimated 3,116 (68.06%) of lower income renter households and 2,143 (65.01%) of lower income owner households were paying more than 25% of income for housing in the unincorporated area of Mendocino County.

## ENERGY CONSERVATION

The climate of Mendocino County is generally mild and characterized by moist cool winters and warm dry summers. There is little temperature range in the vicinity of the coast, but a moderate range is experienced in inland valleys. Extremes of temperature at inland points range from lows of 5 to 10 degrees to highs of 110 or more, while coastal areas have ranges from 20 to 80 degrees.

Annual rainfall in Mendocino County ranges from slightly less than 35 inches (Ukiah area) to more than 80 inches (near Branscomb). Most of the precipitation falls during the winter part of the year, and only at higher elevation is there substantial snowfall. Rainfall is often from brief, intense rains caused by large storms which move in from the northwest. Virtually no rainfall occurs during the summer months.

The moderate temperatures result in fairly low evaporation rates for this latitude. Relative humidity readings average fairly high along the coast, with 70% to 90% being typical values. They drop to moderate values over inland areas during the summer, with daytime readings falling to around 30% on the average.

Winds along the coast are persistent during the summer, and occasionally become strong over the entire area during the winter. Much of the County, however, experiences only light winds during most of the year. Sunshine averages 45%-65% throughout the year along the coast and during winter and spring over inland areas, but increases to 80% inland during the summer and fall.

The Pacific Gas and Electric Company provides service to approximately 90% of the housing units in the County. Electricity is available to all PG & E customers, while natural gas is available only in the Hopland-Ukiah-Willits corridor. Liquified petroleum gas is used by approximately 20% of the County's households. About one quarter of the households utilize wood for some or all home heating. According to the 1980 census, 148 housing units contained no heating equipment, 83 used no heating fuel, 52 used no cooking fuel and 350 used no fuel for heating water.

Mendocino County enforces the State energy conservation standards for new residential construction which specify maximum levels of energy use. Although the standards result in slightly higher new home costs, the more energy-efficient homes are less expensive to heat and cool.

For homes built prior to 1981, PG & E offers two energy conservation programs, ZIP and CASHBACK. The Zero Interest Program (ZIP) provides partial interest-free financing for conservation and weatherization measures. The money may be used to install ceiling insulation, caulking, weather stripping, water heater blankets, duct wrap, low-flow showerheads or wall insulation. Other measures may also be financed if a home energy survey proves them cost-effective. The CASHBACK program provided a 40% reimbursement of costs

for purchase and installation of qualifying energy conservation measures, however the program is being terminated on January 20, 1986. For qualifying customers with low incomes, conservation and home weatherization measures may be obtained free of cost.

Use of solar energy, primarily solar water heating, represents another opportunity for energy conservation. In 1981, the first year that any appreciable number of permits were issued for solar water heating systems, 150 permits were issued. In 1982 there were 100, in 1983 42, in 1984 100, and through August of 1985 31 permits have been issued. The appeal of solar systems may depend more upon tax incentives than on potential savings in energy costs. According to the County Building Department, fewer than 10% of new homes include solar water heating systems.

## HOUSING NEEDS

Previous sections of the Housing Element describe the population, economy and housing characteristics of Mendocino County. Drawing on that information and additional data, this section summarizes and quantifies, as much as possible, the housing needs in the unincorporated area. These needs fall into three categories: existing, special and projected needs. The housing needs identified here provide a focal point for the formulation of housing policies, goals, and programs.

### Existing Needs

#### Overpaying

According to Community Development Commission estimates based on 1980 Census Data, 2,143 lower-income homeowners and 3,116 lower-income renters spend more than 25% of their income for housing within the unincorporated area.

#### Overcrowding

According to the 1980 Census, there were 1,303 overcrowded units in the unincorporated area.

#### Rehabilitation and Replacement Needs

Housing units requiring rehabilitation are generally characterized as deteriorating units with all plumbing facilities (or an acceptable water source and sanitary system) or sound units lacking complete plumbing facilities (or an acceptable water source and sanitary system). Rehabilitation jobs range from installing new electrical wiring, roofs, foundations, floors and plumbing to the repair of windows, screens, faucets and walls. The rule of thumb is when the cost of repairs exceeds 50% of the value of a unit, rehabilitation is not generally feasible and the unit should be replaced.

The best available data indicates roughly 3,130 units need replacement and between 3,320 and 4,590 units need repair in the unincorporated area.

### Special Needs

There are several groups in Mendocino County which have been identified as having special housing needs. They are: the handicapped; Native Americans; farmworkers; the elderly; female heads of households; large families; and the homeless.

#### The Handicapped

Handicapped and disabled persons constitute a significant portion of the population. There are 4,506 residents with a work disability, 2,413 of which are classified as prevented from working. According to the State Department of Rehabilitation, the major type of disability is skeletal or muscular problems. Some of these persons experience mobility problems and encounter difficulties with architectural barriers.

## Native Americans

According to the 1980 Census, there are 2,375 Native Americans in Mendocino County, 1,830 in the unincorporated area. The Native American population resides among the general population, on rancherias, or on the Round Valley Reservation. Native Americans with special needs living on federally-recognized rancherias or reservations fall under federal jurisdiction. Mendocino County reservation and rancheria status is described below.

TABLE 35

### MENDOCINO COUNTY RESERVATION/RANCHERIAS

NAME	STATUS	POPULATION
Round Valley	Reservation	731 <sup>1</sup>
Coyote Valley	Federally Recognized <sup>2</sup> Rancheria	29 <sup>1</sup>
Guidiville	Rancheria	5 households <sup>3</sup>
Hopland	Federally Recognized <sup>4</sup> Rancheria	114 <sup>1</sup>
Laytonville	Federally Recognized <sup>4</sup> Rancheria	121 <sup>1</sup>
Manchester/Point Arena	Federally Recognized <sup>4</sup> Rancheria	100 <sup>1</sup>
Pinoleville	Federally Recognized <sup>5</sup> Rancheria	56 <sup>3</sup>
Potter Valley	Rancheria	3 households <sup>3</sup>
Redwood Valley	Federally Recognized <sup>4</sup> Rancheria	4 households <sup>3</sup>
Sherwood Valley	Federally Recognized <sup>4</sup> Rancheria	7 <sup>1</sup>
Yorba	Rancheria	27 households <sup>3</sup>

1. Bureau of Indian Affairs, Tribal Information and Directory, January, 1984.
2. Member, Round Valley Indian Housing Authority.
3. Community Development Commission of Mendocino County, Housing Conditions Survey, January, 1983.
4. Member, Northern Circle Indian Housing Authority.
5. In process of joining Northern Circle Indian Housing Authority.



In January, 1983, the Community Development Commission staff conducted a house to house survey of the five rancherias not federally recognized at that time: Yokayo; Pinoleville; Guidiville; Redwood Valley; and Potter Valley.\* Subsequently, the County applied for and was successful in obtaining both General Allocation and Native American Setaside State Community Development Block Grant (CDBG) funds for housing rehabilitation on the Yokayo, Guidiville, Redwood Valley, and Pinoleville Rancherias. Under the CDBG Program, 36 of the 48 units found to be suitable for rehabilitation (on all five rancherias) were rehabilitated.

One of the major problems confronting Mendocino County rancherias is that tribal membership exceeds the land available to house those eligible and willing to live on the rancherias. Lack of land and funds for land purchase, infrastructure, and new housing construction are major unmet needs of both federally recognized and non-federally recognized rancherias.

#### Farmworkers

According to the California Employment Development Department the total number of farmworkers in Mendocino County ranged from 1,660 in September to 140 in November for 1984. Of those, the number of regular farmworkers fluctuated between 100 and 220. At the peak of harvest, 86.7 percent were seasonal workers and 41.6 percent of those were local farmworkers.

In 1984, the average number of farmworkers in the County was estimated to be 600.

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\* Pinoleville and Redwood Valley have since been determined, or recognized again by the federal government.

TABLE 36  
MENDOCINO COUNTY  
AGRICULTURAL EMPLOYMENT BY TYPE OF WORKER  
MIDMONTH ESTIMATES 1984

YEAR & MONTH	TOTAL	Farmers & Unpaid Family	H I R E D   D O M E S T I C   W O R K E R S					
			Total	Regular	S E A S O N A L   W O R K E R S			
					Total	Local	Intrastate	Interstate
1984								
JAN	1,040	510	530	170	360	160	100	100
FEB	1,090	510	580	180	400	200	100	100
MAR	1,110	510	600	180	420	200	120	100
APR	630	430	200	100	100	40	30	30
MAY	950	460	490	140	350	150	100	100
JUN	930	460	470	140	330	130	100	100
JUL	630	430	200	100	100	40	30	30
AUG	1,930	480	1,450	210	1,240	500	240	500
SEP	2,150	490	1,660	220	1,440	600	240	600
OCT	880	440	440	120	320	120	100	100
NOV	570	430	140	100	40	20	10	10
DEC	700	470	230	150	80	40	20	20
Annual Avg.	1,070	470	600	150	450	190	100	160

SOURCE: State of California, Employment Development Department, Report 881-M, March 1985

In September, 1985, a prototype Farmworker Housing Survey was developed to evaluate the need for further assessment of farmworker housing conditions and also to evaluate the survey instrument itself (See Appendix 1). The survey was translated into Spanish and administered to 50 farmworkers by the California Human Development Corporation Migrant Program Office in Ukiah. Twelve of the 50 were invalidated because the respondents resided in another County. Some parameters which may be drawn from the survey are:

1. Average number of persons per family - 4.47.
2. Average number of persons per household - 8.39.
3. 71 percent were seasonal workers.
4. 47.4 percent were local.
5. All but three households earned less than \$15,000. While the confidence level in the survey data is not sufficient to infer central tendency, the median recorded income was \$3,500, \$8,000 for regular farmworkers.

6. All but one household were renter households.
7. 89.5 percent were paying more than 25 percent of their income for shelter.
8. 88.6 percent lived in overcrowded conditions. One respondent lived in a garage with fifteen other people.
9. Respondents subjectively rated their housing conditions as follows: 21% - sound; 38% - needs minor repairs; 30% - needs major repairs; 11% - beyond repair.

Observations found year-round farmworkers generally well housed. However, the Farmworker Housing Survey strongly indicates a need to further assess housing conditions among seasonal farmworkers and to develop program incentives to improve their housing conditions.

### Elderly

In 1980 there were 7,125 persons aged 62 and over living in Mendocino County. This was 10.7 percent of the population. At the time, there were 5,225 householders aged 65 and over living in Mendocino County. In the unincorporated area there were 2,974 householders aged 65 and over, and they comprised 17.9 percent of all households. The homeowner rate is 82.8 percent among householders aged 65 and over in the unincorporated area.

The total population over age 62 is expected to increase to 12,717 by 1990.

Mendocino County senior citizens' special housing needs include a variety of housing alternatives to maintain independent living, affordable and accessible rental housing.

### Female Heads of Households

Female heads of households made up 2,202 or 12.1 percent of the total families in Mendocino County in 1980; 1,201 or 9.7 percent in the unincorporated area. Thirty percent of this group had incomes below the poverty level compared to a total family level of 9 percent in the unincorporated area.

Female heads of households have a high need for affordable rental housing and increased opportunities for homeownership.

### Large Households

A large household is one that has five or more persons. According to the 1980 Census, there were 1,835 large households living in the unincorporated area. Although 11 percent of the households in the unincorporated area were made up of five or more persons, only 6.8 percent of the year round housing units had four or more bedrooms. As of September 30, 1985, the Community Development Commission of Mendocino County was assisting 150 very low income

large families and another 197 very low income large families were on the waiting list for rental assistance. Large families experience difficulty finding affordable housing of adequate size. Additional housing units with three or more bedrooms are needed to meet the housing needs of large households.

### Emergency Housing

The need for emergency housing has been described in a May 19, 1980 Committee Report: Emergency Housing and Special Housing Problems, by the Mendocino County Housing Task Force Committee on Emergency Housing and Special Needs Problems. The Committee found:

The need for emergency housing encompasses a large range of situations. Families otherwise able to provide themselves with adequate housing are suddenly and unexpectedly faced with the need for emergency shelter as a result of fire or family break-up. Other families only marginally able to meet their housing needs are left without shelter when their present housing is sold, when a shared housing arrangement breaks down, from an inability to pay rent, or a number of similar reasons. Finally, there is a transient population, composed of both families and individuals, that has emergency shelter needs.

The need for emergency shelter is by its very nature difficult to assess. The housing survey and follow-up meeting conducted by the Sub-Committee was an attempt to measure this need.

(See Appendix 2)

The results of the survey showed the combined estimate for the number of persons in need of emergency housing in a year's time was 1499 individuals. The breakdown between individuals and persons in families was 864 individuals and 557 persons in families (These figures do not add up to the total need because not all agencies answered every question.) Using the County average of 3 persons per family, would indicate approximately 185 families per year face this need. The survey also showed that the three most cited problems related to securing emergency housing were small children, health problems or handicaps, and lack of funds. To the question of why the individual or family was unable to secure shelter, lack of money was cited in 871 instances and the lack of available emergency housing was indicated in 804 instances. Finally, on the question of the number of local residents in need, the number of transients in need, the numbers were 999 local residents and 423 transients.

The special needs of the homeless include both emergency (short term) and transitional (longer term) housing in conjunction with support services to facilitate development of individual and family capacity to provide permanent housing.



## Projected Housing Needs

In addition to documenting existing housing needs, the Housing Element must project future housing needs for all income levels. To assist local governments in Mendocino County in making these projections of future housing needs, the Mendocino Council of Governments (MCOG) has prepared the Mendocino County Housing Needs Plan covering the period from January 1, 1983 to July 1, 1992 (See Appendix 3). The purpose of the plan is to examine housing needs across jurisdictional boundaries and to allocate to each local government responsibility for planning to meet these needs.

The plan divides the County into five housing market areas: the Point Arena market area, the Fort Bragg market area, the Willits market area, the Ukiah market area, and the Mendocino County Unincorporated market area. The Ukiah market area is divided into two parts: Ukiah and the balance of the area (called Ukiah Unincorporated).

The Housing Needs Plan contains two forms of projections. The first is a projection of the distribution of households among four income groups (i.e., very low, other lower, moderate, and above moderate) for the years 1983 to 1992. These projections should be used as a guideline to ensure that housing policies and programs focus on providing the appropriate mix of housing types to meet the needs of all economic segments of the community.

As Table 37 indicates, the Housing Needs Plan projects that the percentage of very low income households will show a small increase by two percent between 1983 and 1992. Both moderate and above moderate income households are expected to decrease by one percent during the same period. This slight shift is a result of a "same share" allocation for the Ukiah market area, because there is equal access throughout the area for employment opportunities and because both Ukiah and the adjoining area are considered to be equally suitable locations for lower income households seeking housing.



TABLE 37

MENDOCINO COUNTY  
(Unincorporated Area)<sup>1</sup>

Estimated Households by Income Group January 1, 1983  
and  
Projected Households on July 1, 1992 with Income Group Allocations

Area	Income Group	Households		Percentages	
		1983	1992	1983	1992
Ukiah Unincorporated	Very Low	865	1,404	17	23
	Other Low	864	977	17	16
	Moderate	1,220	1,404	24	23
	Above Moderate	2,135	2,319	42	38
	Total	5,084	6,104	100	100
Mendocino County Unincorporated Market Area	Very Low	3,350	4,188	27	27
	Other Lower	2,085	2,637	17	17
	Moderate	2,817	3,412	22	22
	Above Moderate	4,324	5,273	34	34
	Total	12,576	15,510	100	100
Total Mendocino County Unincorporated	Very Low	4,215	5,592	24	26
	Other Lower	2,949	3,614	17	17
	Moderate	4,037	4,816	23	22
	Above Moderate	6,459	7,592	36	35
	Total	17,660	21,614	100	100

SOURCE: Mendocino Council of Governments, Mendocino County Housing Needs Plan, Revised August 5, 1985.

1. Ukiah Unincorporated and Mendocino County Unincorporated Market Areas were aggregated to arrive at the total Mendocino County Unincorporated figures.

The second type of projections are estimates of the total number of new housing units that should be constructed between 1983 and 1992 to meet the needs of new households expected to reside in the unincorporated area. According to the MCOG Housing Needs Plan, 2,470 units needed to be built in the unincorporated area between January 1, 1983 and July 1, 1992. The basic construction needs in the plan do not include allowances for construction needs which result from the need to remove units which are beyond repair or are not economically feasible to repair. Units which are removed from the

housing stock in the normal course of housing market activity (demolitions, changes to commercial use, etc.) are not necessarily the substandard units. Consequently, the basic construction needs are to be supplemented by estimates of construction needed because of the need to remove units which are in poor physical condition.

TABLE 38

MENDOCINO COUNTY UNINCORPORATED AREA  
REVISED NEW CONSTRUCTION NEEDS  
AUGUST 1, 1985 - JULY 1, 1992

New Construction Needs, 1983-1992 (MCOG Housing Needs Plan)	2,470
New Units Built, 1/1/83 - 7/31/85	<u>-1,008</u> 1,462
Demolitions, 1/1/83 - 7/31/85	<u>+ 45</u> 1,507
Units Existing and Needing Replacement	<u>+3,130</u>
Revised New Construction Needs, 8/1/85 - 7/1/92	4,637

TABLE 39

MENDOCINO COUNTY UNINCORPORATED AREA  
NEW CONSTRUCTION NEEDS BY INCOME GROUP  
1985 - 1992<sup>1</sup>

INCOME GROUPS	NUMBER OF UNITS <sup>2</sup>
Very Low	1,206
Other Low	788
Moderate	1,020
Above Moderate	1,623
TOTAL	<u>4,637</u>

1. January 1, 1985 to July 1, 1992
2. Using the same percentage distribution of household for 1992 as shown in Table 37.

Table 38 provides a revised new construction need figure based on new construction that has already occurred between January 1, 1983 and July 31, 1985, units that have been demolished and need to be replaced and existing units that are considered beyond repair and need replacement. Table 39 summarizes the Mendocino County unincorporated area's revised projected needs by income groups for new construction to accommodate both expected growth and existing deficiencies.

## INVENTORY & ANALYSIS OF LAND SUITABLE FOR RESIDENTIAL DEVELOPMENT

This section examines the availability of land for residential development and analyzes the relationship of zoning, public facilities and public services to those sites.

### Land Ownership

There are approximately 2,247,680 acres of land in Mendocino County. Various government agencies own 18.3% of the County, leaving 1,837,078 acres in private ownership.

TABLE 40

#### LAND OWNERSHIP IN MENDOCINO COUNTY<sup>1</sup>

Total Land Area	(100.0%)	2,247,680 acres <sup>2</sup>
Federal	(13.8%)	310,489 acres <sup>3</sup>
State	(3.3%)	73,843 acres <sup>3</sup>
County	(0.3%)	5,587 acres <sup>3</sup>
Local Agency	(0.1%)	2,714 acres <sup>3</sup>
Total Government Owned	(17.5%)	392,634 acres <sup>3</sup>
Indian Lands	(0.8%)	17,968 acres <sup>4</sup>
Total Non-Private	(18.3%)	410,602 acres
Total Private	(81.7%)	1,837,078 acres

1. Includes land within incorporated cities.
2. County and City Data Book 1983, Bureau of Census.
3. California County Fact Book 1983, CSAC.
4. General Plan, Page I-44.

The four incorporated cities within Mendocino County encompass some 5,984 acres, or 0.3% of the County land area.

TABLE 41

#### INCORPORATED/UNINCORPORATED LAND AREA

Total Land Area	(100.0%)	2,247,680 acres <sup>1</sup>
City of Ukiah		2,624 acres <sup>1</sup>
City of Willits		1,344 acres <sup>1</sup>
City of Fort Bragg		1,216 acres <sup>1</sup>
City of Point Arena		800 acres <sup>2</sup>
Total Incorporated	(0.3%)	5,984 acres
Total Unincorporated	(99.7%)	2,241,696 acres

1. County and City Data Book 1983, Bureau of Census
2. City of Point Arena

Two thirds of the privately owned land in Mendocino County is either zoned Timberland Production (TPZ) (44.6%) or is in agricultural preserve (25.7%). Of the remaining 29.7%, 27.6% is agricultural or timber land not in TPZ or preserve, leaving 1.8% (33,262 acres) in the unincorporated area for residential, commercial and other types of development. In actuality considerably more land is available for development due to the fact that a significant amount of the agricultural and timber land not in TPZ or preserve is zoned for non-agricultural uses. Table 43 shows that there are 114,426 acres outside the coastal zone zoned for residential uses and an additional 10,458 residential parcels for which the acreage is unknown. In addition there is more land within the coastal zone that is or will be zoned for residential uses. Table 43 also shows 2,483 acres for commercial and industrial uses, with 685 commercial and industrial parcels of unknown acreage. Consequently the amount of land designated for residential or commercial use in the county is more in the neighborhood of 118,000 acres, or 6½% of the privately-owned land in the county.

TABLE 42

USES OF PRIVATELY OWNED LAND

Areas within incorporated cities	(0.3%)	5,984 acres <sup>1</sup>
Private Land zoned TPZ	(44.6%)	819,312 acres <sup>2</sup>
Type I Agricultural Preserves	(1.4%)	25,022 acres <sup>3</sup>
Type II Agricultural Preserves	(24.3%)	447,061 acres <sup>3</sup>
Forest land not in TPZ	(15.0%)	275,684 acres <sup>5,7</sup>
Agricultural land not in preserve	(12.6%)	230,753 acres <sup>6,7</sup>
Residential, Commercial, Industrial, Other	(1.8%)	33,262 acres
Total privately owned land in Mendocino County	(100%)	1,837,078 acres

1. From Table 41. Incorporated areas may include some publicly owned land which has already been subtracted once in Table 40.
2. Land zoned TPZ 870,537 acres<sup>3</sup>  
Jackson State Forest - 51,225 acres<sup>4</sup>  
Private land in TPZ 819,312 acres
3. Ollie Kolkman, Assessor's Office, Subvention Report through 3/1/83.
4. General Plan, Open Space and Conservation Element, Page VIII-88.
5. Computed from "Forestry 'State of the Resource - 1980'", revised 10/80, Planning Department; and Table 42.
6. Computed from "Agriculture 'State of the Resource'", Planning Department; and Table 42.
7. Figures may include land converted to non-agricultural uses.



## Zoning

A compilation of numbers of parcels and area by zone (Table 43) shows that there are 18,918 existing parcels in the County zoned for residential use outside the coastal zone, 10,104 of which are presently vacant, and that 19,504 additional parcels could be created under present zoning. These figures may be lower than the actual numbers due to the parcels of unknown acreage and parcels without zoning information (See footnotes, Table 43).

The parcel totals shown in Tables 43 and 44 are Assessor's Parcels which do not in all cases represent separate developable lots. Assessor's parcel numbers are assigned to areas of land for a variety of reasons and do not necessarily mean that separate parcels have been created in accordance with land division regulations. A single parcel may have more than one Assessor's Parcel Number.

TABLE 43  
PARCELS BY ZONE<sup>1</sup>

ZONE	MINIMUM <sup>8</sup> PARCEL SIZE	PARCEL COUNT	ACRES	ACREAGE <sup>2</sup> UNKNOWN	WITH <sup>3</sup> BUILDINGS	VACANT	POTENTIAL <sup>4</sup> NEW PARCELS	POTENTIAL <sup>5</sup> VACANT PARCEL
PRIVATE Residential	I-1 6K	87	117.97	62	51	36	816	352
	I-1 12K	103	306.05	21	71	32	993	1,025
	I-1 40K	28	247.01	10	12	16	243	259
	I-2 6K	60	389.22	25	27	33	2,775	2,808
	I-2 12K	64	503.59	13	30	34	1,751	1,755
	I-2 40K	14	183.30	1	9	5	181	186
	C-1 6K	424	152.14	354	183	241	1,005	1,246
	C-1 12K	151	180.95	99	94	57	579	646
	C-1 40K	25	40.07	7	17	8	21	27
	C-2 6K	40	51.39	26	33	7	353	35
	C-2 12K	57	144.88	29	44	13	485	494
	C-2 40K	73	166.72	38	57	16	148	164
	RC 6K	17	141.62	5	10	7	1,008	1,017
	RC 40K	385	1,354.32	150	245	140	1,174	1,313
	SR 6K	151	280.15	93	114	37	1,948	1,961
	SR 12K	662	840.56	334	526	136	2,655	2,791
	SR 40K	391	1,443.37	247	283	108	1,384	1,491
	R1 6K	6,392	796.69	5,884	1,473	4,919	5,028	9,941
	R1 12K	340	299.86	31	293	47	679	726
	R1 40K	20	0.00	20	11	9	0	9
	R2 6K	449	3.86	435	79	370	8	373
	R3 6K	262	15.62	243	53	209	86	295
	R3 12K	4	1.10	0	4	0	0	0
	RR 1	2,491	5,320.59	1,077	1,843	648	3,622	4,270
	RR 2	745	1,608.94	315	584	161	363	584
	RR 5	1,714	6,820.34	725	1,039	675	580	1,255
	RR 10	1,155	9,147.36	254	659	496	234	730
	UR 20	2,109	35,174.18	444	948	1,161	406	1,557
	UR 40	1,628	50,863.62	201	649	979	329	1,308
	UR 80	2	274.00	0	1	1	0	1
	UR 160	1	40.00	0	0	1	0	1
	AG 40	2,966	51,156.61	428	1,902	1,064	218	1,282
	RL 160	7,163	707,197.29	552	1,607	5,556	1,009	6,565
	FL 160	1,487	61,030.80	145	477	1,010	25	1,035
	TP 160	5,176	776,876.61	103	470	4,706	1,448	6,154
	PF -	2,057	306,688.34	137	9	2,048	0	2,048
	OS -	135	26,045.90	1	0	135	0	135
	TP(JSF) <sup>6</sup> -	153	50,228.24	0	1	152	0	150
MULTI-FAMILY RESIDENTIAL <sup>9</sup>		2,642	4,812.89	1,625	1,663	979	10,846	11,825
TOTAL RESIDENTIAL		18,918	114,426.18	10,458	8,814	10,104	19,504	29,608
TOTAL PRIVATE		36,836	1,713,170.70	12,372	13,898	22,938	31,554	54,480
PARCELS WITHOUT ZONING INFORMATION <sup>7</sup>		48	2,335.84	15	10	38	-	38
COASTAL ZONE (SEE <sup>10</sup> TABLE 44)		8,040	97,118.88	4,051	3,881	4,159	-	4,159
TOTAL		47,269	2,195,587.70	16,576	17,799	29,470	31,554	61,024

SOURCE: Planning and Building Services Department. LAP026, 10-2-85.

1. Zoned area does not include coastal zone or incorporated cities.
2. Parcels of unknown acreage are those for which parcel size has not been entered into the computer file from which this table is derived. The 16,576 parcels with unknown acreage comprise approximately 24% of the unincorporated area of the county.
3. Parcels with buildings are those parcels with an assessed FMV for improvements of \$1,500 or greater or with a homeowner's exemption.
4. Potential new parcels are calculated by dividing each parcel by the minimum parcel size to get the total number of parcels possible, then subtracting existing parcels.
5. Potential vacant parcels equals the number of existing vacant parcels plus the potential new parcels.
6. JSF equals Jackson State Forest, which is state owned land zoned Timberland Preserve.
7. Parcels without zoning information are new parcel numbers that have not yet been updated with zoning.
8. Numbers followed by "K" indicate thousands of square feet. Other numbers indicate acres. Except in I-1, I-2, PF, OS and TPZ (JSF) zones in which residential uses are not permitted, one dwelling unit, and in many cases one second dwelling unit, may be constructed per legal parcel. Higher densities may be allowed in zones permitting multi-family residential uses (dwelling groups). (See multi-family residential totals above and footnote 9 below.)
9. Multi-family residential buildings are permitted in the R3 zone and permitted with a minor use permit in the RC, SR, C-1 and C-2 zones.
10. Coastal Zone information is not yet available from the computer.

## Land Use

Use of land in Mendocino County is presently governed by three sets of regulations. The inland portion is regulated by the Zoning Ordinance adopted June 27, 1983. The Coastal Zone is regulated partly by the County's 1956 Zoning Ordinance, and partly by the Coastal Element of the General Plan. The Coastal Element (LCP) has been adopted by the County and submitted to the State for certification. Following certification a Zoning Ordinance will be developed to implement the Coastal Element, replacing the 1956 Zoning Ordinance. Development on the coast is further restricted by the injunction imposed in 1979 as a result of Adams vs. Mendocino County. The injunction restricts land divisions, rezonings and use permits.

Table 43 does not include land within the Coastal Zone except to indicate that the zone contains 8,040 parcels. (The Coastal Zone acreage figure given in Table 43 is not accurate due to the 4,051 parcels in the Coastal Zone for which parcel size is unknown).

Table 44 provides information on the numbers of parcels within the various land use classifications proposed in the Coastal Plan. The Coastal Plan classifications are not yet in effect, however, because the County's Coastal Plan has not yet been certified by the State Coastal Commission. A tabulation of parcels by existing zoning in the coastal zone is not available.

TABLE 44  
COASTAL ZONE PARCELS BY LCP CLASSIFICATION <sup>1,2</sup>

LCP	MINIMUM <sup>3</sup> PARCEL SIZE	ALL PARCELS	VACANT PARCELS	PARCELS <sup>4</sup> W/BLDGS	POTENTIAL NEW PARCELS	TOTAL POTENTIAL VACANT
		NUMBER	NUMBER			
COASTAL ZONE EXCEPT TOWN OF MENDOCINO						
Private Residential	I	Varies	31	16	15	345
	C	Varies	282	211	71	823
	RV	Varies	333	154	179	419
	FV	Varies	71	25	46	245
	SR	Varies	886	558	328	769
	RR	1	1,800	863	937	550
	RR	2	1,104	407	697	726
	RR	5	742	362	380	281
	RR	10	335	227	108	89
	RMR	20	473	320	153	101
	RMR	40	68	52	16	11
	AG	40	106	85	21	53
	RL	160	404	360	44	12
	FL	160	86	78	8	32
	PF	---	37	35	2	---
	OS	---	264	260	4	---
TOWN OF MENDOCINO						
Private Residential	C	Varies	62	5	57	9
	MU	Varies	37	11	26	98
	SR	Varies	35	14	21	7
	R+	12K	95	13	82	31
	RM	Varies	31	1	30	86
	RR	40K	130	46	84	153
	PF	---	21	16	5	0
	OS	---	6	6	0	0
TOTAL RESIDENTIAL		6,140	3,053	3,087	3,566	6,629
TOTAL PRIVATE		7,111	3,808	3,303	4,824	8,642
TOTAL		7,439	4,125	3,314	4,824	8,959

SOURCE: Planning and Building Services Department.

1. The Local Coastal Plan (LCP) has been adopted by the Mendocino County Board of Supervisors and certified by the Coastal Commission. Implementing ordinances are being developed.
2. The figures in Table 44 were compiled from a count of parcels shown on the LCP maps done in 1982. Total parcels counted are fewer than the number obtained from the computer report summarized in Table 43. Insufficient time was available to determine the reason for the difference. General Plan, Zoning and parcel size information is being entered into the computer for the Coastal Zone. When the project is complete, Table 43 will contain totals for the Coastal Zone as well as the inland portion of the County.
3. For those LCP classifications with a minimum parcel size indicated as "varies", the minimum parcel sizes may include 6,000 square feet, 12,000 square feet or 40,000 square feet depending on the availability of water and/or sewer services.
4. Parcels with buildings were considered to be any parcels with an assessed valuation for improvements of \$375.00 or greater, or with a homeowner's exemption. The maps have been updated as building permits have been issued in the coastal zone.

Table 44 shows that there are 6,140 parcels within residential classifications in the Coastal Zone, 3,053 of which are vacant, and a potential for 3,566 new parcels under the proposed coastal plan.

Residential uses and densities allowed by the County's Zoning Ordinance are shown in Table 45. Each of the residential zones will allow a single family dwelling and a second unit. In order for a second unit to be allowed on a parcel there must be adequate water available and an adequate sewage disposal system. Mobile homes are allowed in all zones, but they must be placed on foundations. With a minor use permit, a temporary dwelling unit may be placed on a parcel for a dependent relative. Dwelling groups are permitted subject to approval of a minor use permit. Minimum parcel sizes allowed are generally dependent upon the availability of water and sewage disposal systems except in the RR and UR zones. The minimum parcel size in an RR zone may be 40,000 square feet, 80,000 square feet, five acres or ten acres. The minimum parcel size in a UR zone may be twenty or forty acres.

TABLE 45  
ZONES PERMITTING RESIDENTIAL USES - INLAND

ZONE	DESCRIPTION	HOUSING TYPES ALLOWED								MINIMUM PARCEL SIZE
		SFD	2ND UNIT	MFD	MH	MH PARK	GUEST HOUSES	DEPENDENT RELATIVE	DWELLING GROUP	
C2	General Commercial	1	2	3	1	4	1	3	3	6,000 sq ft <sup>5,6,7,8</sup>
C1	Limited Commercial	1	2	3	1	4	1	3	3	6,000 sq ft <sup>5,6,7,8</sup>
RC	Rural Community	1	2	3	1	4	1	3	3	6,000 sq ft <sup>5,6,7</sup>
SR	Suburban Residential	1	2	3	1	4	1	3	3	6,000 sq ft <sup>5,6,7</sup>
R1	Single Family Residential	1	2		1		1	3	3	6,000 sq ft <sup>6</sup>
R2	Two Family Residential	1	2		1		1	3	3	6,000 sq ft <sup>6</sup>
R3	Multiple Family Residential	1	2	1	1		1	3	3	6,000 sq ft <sup>5,6,7</sup>
RR	Rural Residential	1	?		1		1	3	3	40,000 sq ft
UR	Upland Residential	1	2		1		1	3	3	20 acres

SOURCE: Planning and Building Services Department.

1. Permitted use.
2. Subject to water availability and sewage disposal.
3. Minor use permit required.
4. Major use permit required.
5. 6,000 square feet (4,000 square feet for mobile home subdivisions and manufactured home subdivisions).
6. Both water and sewer systems must be available for 6,000 square foot lots. If only water or sewer is available, the minimum parcel size is 12,000 square feet. With neither a water or sewer system, the minimum is 40,000 square feet.
7. Maximum density for multi-family units is one unit per 1,500 square feet of parcel area.
8. No minimum lot sizes for commercial uses.



A table for uses permitted in the coastal zone similar to Table 45 for the inland portion of the County has not been prepared for the following reasons. A list of zones applicable in the coastal zone is not available without doing a parcel by parcel search through the Assessor's Map books. Development in the Coastal Zone is regulated not only by County zoning, but by the Coastal Commission as well. A use allowed by County zoning may not be permitted by the Coastal Commission. The existing zoning will be superseded as soon as the Coastal Element of the General Plan is certified and a new Zoning Ordinance prepared.

Because a Zoning Ordinance has not yet been prepared to implement the Coastal Element, a table of uses per zone cannot be prepared for the Coastal Zone. However, some general statements can be made based on the proposed plan. A residence will be allowed on each parcel in the residential classifications with the exception of Fishing Village where coastal-dependent industries may have priority. Second units will be allowed as provided by Government Code Section 65852.2(b). Mobile homes on foundations will be permitted the same as conventional dwellings. Housing for dependent relatives over 60 years of age and temporary housing will also be permitted. Multiple dwelling units will be conditionally allowed in the Suburban Residential classification.

#### Existing and Potential Residential Capacity

Adding the figures from Tables 43 and 44 shows 25,058 parcels in the County zoned for residential development, 13,157 of which are vacant, giving a current build-out of 53%. The tables show that an additional 23,070 residential parcels could be created if all parcels with potential for division were divided. As noted in the footnotes to the two tables, the numbers do not include all the parcels in the County. In addition, parcel size is not known for approximately 42% of the residential parcels in the County so the number of potential parcels will be greater than the figures given above.

In non-residential areas there are an additional 13,589 vacant parcels. However, in the case of non-residential parcels, many may not be separate parcels, but instead may be portions of single ownerships. Also many of the vacant non-residential parcels are in commercial or industrial areas where dwellings would be inappropriate. Therefore the number of potential dwellings that could be built on vacant non-residential parcels would be considerably fewer than 13,589.

A table of parcels by zone has been prepared for each of the six major water districts in the inland portion of the County. The districts are Brooktrails Community Services District, Hopland Public Utilities District, Millview County Water District, Redwood Valley County Water District, Rogina Water Company and Willow County Water District. Two coastal service areas, the area served by the City of Fort Bragg and the North Gualala Water Company would also have been included except that they include large portions of the coastal zone within their service areas. Zoning and minimum parcel size information necessary to prepare the parcels by zone tables is not yet available in the coastal zone. It is possible to determine, however, that there are 90 existing vacant parcels within the City of Fort Bragg water service area outside the city and 675 existing vacant parcels within the North Gualala Water Company area.

TABLE 46  
PARCELS BY ZONE<sup>1</sup>  
BROOKTRAILS COMMUNITY SERVICE DISTRICT

ZONE	MINIMUM PARCEL SIZE	PARCEL COUNT	ACRES	ACREAGE UNKNOWN	PARCELS WITH BUILDINGS	VACANT	POTENTIAL NEW PARCELS	POTENTIAL VACANT PARCELS
I-1	6K	168	22.73	152	12	156	144	300
SR	40K	8	.00	8	2	6	0	6
R1	6K	5,346	571.92	4,965	591	4,755	3,585	8,340
R2	6K	421	3.86	407	51	370	8	378
R3	6K	214	2.90	201	13	201	3	204
RR	20	143	3,306.18	5	66	77	25	102
RL	160	1	40.00	0	0	1	0	1
FL	160	20	157.95	17	2	18	0	18
FP	160	1	41.97	0	1	0	0	0
PF	-	451	2,031.03	50	1	450	0	450
PARCELS WITHOUT ZONING INFORMATION <sup>2</sup>		12	.00	12	0	12	0	12
MULTI-FAMILY RESIDENTIAL		390	25.63	361	27	363	147	510
TOTAL RESIDENTIAL		6,132	3,884.86	5,586	723	5,409	3,621	9,030
TOTAL <sup>2</sup>		6,785	6,178.54	5,817	739	6,046	3,765	9,811

SOURCE: Planning and Building Services Department. LAP026, 10-4-85.

1. Refer to footnotes for Table 43.
2. A study prepared in 1976 determined that 276 lots in Brooktrails are not developable.

TABLE 47  
PARCELS BY ZONE<sup>1</sup>  
HOPLAND PUBLIC UTILITIES DISTRICT

ZONE	MINIMUM PARCEL SIZE	PARCEL COUNT	ACRES	ACREAGE UNKNOWN	PARCELS WITH BUILDINGS	VACANT	POTENTIAL NEW PARCELS	POTENTIAL VACANT PARCELS
I-1	6K	3	30.09	1	2	1	215	216
I-2	6K	4	5.49	1	3	1	36	37
C-1	6K	60	14.69	49	51	9	92	101
C-2	6K	5	16.98	0	4	1	116	117
C-2	40K	2	7.31	0	2	0	5	5
RC	6K	1	.25	0	1	0	0	0
SR	6K	90	98.83	61	71	19	674	693
R1	6K	15	.23	14	12	3	0	3
R1	40K	1	.00	1	0	1	0	1
R3	6K	1	1.73	0	1	0	11	11
RR	1	15	172.01	6	6	9	161	170
RR	5	1	24.31	0	1	0	3	3
AG	40	10	89.35	1	6	4	0	4
RL	160	1	1.39	0	0	1	0	1
PF	-	1	1.15	0	0	1	0	1
MULTI-FAMILY RESIDENTIAL		159	139.79	110	130	29	898	927
TOTAL RESIDENTIAL		124	297.36	82	92	32	849	881
TOTAL		210	463.81	134	160	50	1,313	1,363

SOURCE: Planning and Building Services Department. LAP026, 10-4-85.

1. Refer to footnotes for Table 43.

TABLE 48  
PARCELS BY ZONE<sup>1</sup>  
MILLVIEW COUNTY WATER DISTRICT

ZONE	MINIMUM PARCEL SIZE	PARCEL COUNT	ACRES	ACREAGE UNKNOWN	PARCELS WITH BUILDINGS	VACANT	POTENTIAL NEW PARCELS	POTENTIAL VACANT PARCELS
I-1	6K	22	17.65	13	14	8	113	121
I-1	12K	93	270.11	20	66	27	876	903
I-2	6K	8	26.10	6	6	2	187	189
I-2	12K	14	40.18	5	6	8	133	141
C-1	6K	1	.00	1	1	0	0	0
C-1	12K	24	20.20	8	21	3	50	53
C-2	6K	13	14.50	9	11	2	100	102
C-2	12K	25	73.11	6	21	4	237	241
SR	12K	233	139.94	133	203	30	376	406
R1	6K	339	21.60	334	317	22	150	172
R1	12K	30	.00	30	27	3	0	3
R2	6K	28	.00	28	0	0	0	0
R3	6K	17	.00	17	15	2	0	2
RR	1	208	192.50	134	171	37	112	149
RR	5	74	715.49	20	44	30	87	117
RR	10	40	295.38	6	26	14	10	24
UR	20	7	94.90	5	1	6	2	8
UR	40	2	.00	2	0	2	0	2
AG	40	118	1,426.35	31	78	40	3	43
RL	160	30	502.27	4	9	21	0	21
PF	-	9	32.04	1	0	9	0	9
PARCELS WITHOUT ZONING INFORMATION <sup>7</sup>		2	21.24	1	1	1	0	1
MULTI-FAMILY RESIDENTIAL		313	247.75	174	272	41	763	804
TOTAL RESIDENTIAL		978	1,459.81	709	832	146	737	883
TOTAL		1,337	3,903.56	814	1,066	271	2,436	2,707

SOURCE: Planning and Building Services Department. LAP026, 10-3-85.

1. Refer to footnotes for Table 43.

TABLE 49  
PARCELS BY ZONE<sup>1</sup>  
REDWOOD VALLEY COUNTY WATER DISTRICT

ZONE	MINIMUM PARCEL SIZE	PARCEL COUNT	ACRES	ACREAGE UNKNOWN	PARCELS WITH BUILDINGS	VACANT	POTENTIAL NEW PARCELS	POTENTIAL VACANT PARCELS
I-1	12K	3	26.14	0	2	1	90	91
C-1	12K	31	117.54	12	26	5	397	402
C-2	12K	8	1.96	5	5	3	3	6
SR	12K	103	144.12	50	78	25	447	472
RR	10	73	460.48	12	55	18	14	32
RR	5	240	609.81	70	194	46	13	59
RR	2	40	128.31	18	31	9	37	46
RR	1	587	963.90	271	478	109	568	677
UR	40	6	170.87	1	3	3	0	3
AG	40	402	4,599.51	45	311	91	6	97
RL	160	36	1,295.31	3	14	22	1	23
PF	-	11	154.88	3	0	11	0	11
MULTI-FAMILY RESIDENTIAL		142	263.62	67	109	33	847	880
TOTAL RESIDENTIAL		1,049	2,477.49	422	732	210	1,079	1,289
TOTAL		1,540	8,672.83	492	1,107	343	1,576	1,919

SOURCE: Planning and Building Services Department. LAP026, 9-6-85.

1. Refer to footnotes for Table 43.

TABLE 50  
PARCELS BY ZONE<sup>1</sup>  
ROGINA WATER COMPANY, INCORPORATED

ZONE	MINIMUM PARCEL SIZE	PARCEL COUNT	ACRES	ACREAGE UNKNOWN	PARCELS WITH BUILDINGS	VACANT	POTENTIAL NEW PARCELS	POTENTIAL VACANT PARCELS
I-2	40K	1	13.41	0	1	0	13	13
C-1	12K	4	3.65	0	4	0	8	8
SR	12K	138	86.13	3	125	13	186	199
R3	12K	4	1.10	0	4	0	0	0
RC	6K	6	135.30	0	5	1	972	973
R1	6k	1	74.00	0	0	1	536	537
R1	12k	267	265.63	1	228	39	614	653
RR	1	1	110.00	0	1	0	109	109
RR	5	39	25.62	1	34	5	0	5
AG	40	308	3,358.67	8	235	73	7	80
RL	160	79	2,740.02	5	42	37	0	37
PF	-	4	44.33	0	0	4	0	4
MULTI-FAMILY RESIDENTIAL		152	226.18	5	138	14	1,166	1,180
TOTAL RESIDENTIAL		456	697.78	5	397	59	2,417	2,476
TOTAL		852	6,857.86	18	679	173	2,445	2,618

SOURCE: Planning and Building Services Department. LAP026, 9-6-85.

1. Refer to footnotes for Table 43.

TABLE 51  
PARCELS BY ZONE<sup>1</sup>  
WILLOW COUNTY WATER DISTRICT

ZONE	MINIMUM PARCEL SIZE	PARCEL COUNT	ACRES	ACREAGE UNKNOWN	PARCELS WITH BUILDINGS	VACANT	POTENTIAL NEW PARCELS	POTENTIAL VACANT PARCELS
I-1	6K	46	6.85	38	28	18	37	55
I-2	6K	7	11.01	3	5	2	74	76
C-1	6K	55	25.47	38	49	6	161	167
C-2	6K	8	13.73	5	8	0	95	95
R1	6k	505	74.15	453	439	66	461	527
R3	6K	29	9.00	25	24	5	59	64
SR	6K	34	147.80	12	26	8	1,042	1,050
SR	12K	1	29.18	0	0	1	104	105
RR	5	65	54.91	55	33	32	4	36
RR	10	37	169.91	16	29	8	6	14
UR	40	6	71.12	3	2	4	0	4
AG	40	60	352.16	20	38	22	0	22
RL	160	26	461.50	3	8	18	0	18
PF	-	1	.00	1	0	1	0	1
MULTI-FAMILY RESIDENTIAL		127	225.18	80	107	20	1,461	1,481
TOTAL RESIDENTIAL		677	556.07	564	553	124	1,676	1,800
TOTAL		880	1,426.79	672	689	191	2,043	2,234

SOURCE: Planning and Building Services Department. LAP026, 8-14-85.

1. Refer to footnotes for Table 43.



The tables were prepared to better identify those areas of the County best able to accommodate additional housing development and to further refine estimates of vacant land suitable for housing. Land served by community water systems is also likely to be served by roads, fire departments, schools, and to be near shopping facilities and employment. Table 52 summarizes the results from Tables 46 through 51 and shows that in the six selected water service areas there are 5980 existing vacant parcels zoned for residential use, and potential, based on minimum parcel size limits, for 10,379 new parcels. Residential parcels with a minimum parcel size of 6,000 square feet, indicating that sewer service as well as water service is available, number 7047 in the six service areas, 5453 of which are vacant.

The Mendocino County Housing Needs Plan, revised August 5, 1985, identifies a need in the unincorporated area of the County for 1,629 housing units by 1992. Table 52 indicates that there are 5,980 vacant parcels zoned for residential use within six selected water service areas. Table 43 shows 10,104 vacant residential parcels in the unincorporated portion of the County outside the coastal zone. It may be concluded that even without considering potential new parcels, there are ample sites within the County for construction of the needed housing units.

TABLE 52  
RESIDENTIALLY ZONED PARCELS BY SELECTED WATER SERVICE AREAS<sup>1</sup>

	Parcel Count	Vacant Parcels	Acres	Potential New Parcels
Brooktrails CSD	6,132	5,409	3884.86	3,621
Hopland PUD	124	32	297.36	849
Millview Water	978	146	1459.81	737
Redwood Valley	1,049	210	2477.49	1,079
Rogina Water	456	59	697.78	2,417
Willow Water	677	124	556.07	1,676
TOTAL	9,416	5,980	9373.37	10,379

SOURCE: Planning and Building Services Dept.

1. Refer to footnotes for Table 43.

The majority of the vacant residential parcels are within the Brooktrails Community Services District. Brooktrails is a large residential subdivision northwest of Willits that was developed in the 1960's and was aimed at the second home market. Out of 6,785 parcels only 739 have been developed. Many parcels are held for speculation or eventual development as retirement homes.



Although parcels in Brooktrails are generally less expensive than parcels with water and sewer in other areas of the County, they may not be appropriate for low income families due to higher site development costs due to topography and architectural requirements, and distance from sources of employment. If the Brooktrails parcels are not included in the above analysis of available parcels the numbers are considerably reduced.

If the Brooktrails parcels are not included, there are 571 existing vacant residential parcels in the remaining five service areas, and a potential for 6,758 new parcels. In the unincorporated portion of the County there are 7,748 existing vacant residential parcels. Vacant residential parcels within the unincorporated area outside the coastal zone and supplied with water and/or sewer service number 309. Many of these have potential for division as there are 7,791 potential new residential parcels with water and/or sewer service.

Once again, the numbers cited above should not be taken as absolutes, but rather as an indication of the relative magnitude of numbers of parcels in the various categories. Bearing this caution in mind however, it does appear that there is an ample quantity of land with services available to provide for the projected housing demand over the next five years.

#### Surplus Land

Although nearly one-fifth of Mendocino County is owned by various public agencies, there are few parcels that are considered surplus. During preparation of the 1985-86 budget the County reviewed all county-owned lands and found none that could be declared surplus. A survey of school districts in the County yielded two surplus parcels and one which may become surplus. One surplus parcel is located in Comptche, is two acres in size, and is classified Rural Residential:2 acres minimum. The other is located on the east side of Highway 1 north of Gualala, is less than one acre and is designated by the Coastal Plan as Rural Residential:5 acres minimum. The potentially surplus parcel is in Redwood Valley, is 50 acres in size and is classified by the General Plan as Public Land. Adjacent land use classifications are Agriculture:40 acres minimum and Rural Residential:1 acre minimum. Of the three, only the Redwood Valley site appears to offer any potential as a housing site.

#### Lands Pending Annexation

The Local Agency Formation Commission of Mendocino County (LAFCO) processes about ten annexations per year. Approximately half are service district annexations and half are annexations to the incorporated cities within the county. The City of Fort Bragg during 1984 and 1985 made several annexations, but now has declared a moratorium on new annexations due to limitations in the City's ability to provide water service. No annexations are pending in the City of Point Arena. The City of Ukiah is considering a possible annexation of commercial land in the vicinity of Talmage Road and U.S. Highway 101. The City of Willits has an annexation pending on approximately 250 acres southeast of town for which an environmental impact report has been prepared. The annexation may include land for residential use however that determination has not yet been made. No significant service district annexations are pending.



## SERVICES

There are approximately 150 agencies in Mendocino County providing various services such as water, sewer, fire, school, lighting and cemeteries. The two services most critical to housing are water and sewer service. Land within water and sewer districts is also generally within or nearby such other important districts as fire protection and schools. Water is provided by 45 different agencies ranging from large districts with 800-900 connections to small private companies serving 10 or fewer customers. Fourteen agencies provide wastewater collection and treatment within the County. Most of the County is dependent upon wells or springs for water and on septic tanks for sewage disposal. Both water and sewer service are only available in seven areas of the County: Ukiah, Willits/Brooktrails, Fort Bragg, Hopland, Calpella, Westport and Point Arena.

Table 53 summarizes the results of a survey conducted by the Mendocino County Community Development Commission in June, 1984. The survey questionnaire was sent to selected water and sewer agencies requesting information regarding present service and capacity to serve future development. Two of the water districts and three of the sewer districts surveyed have no capacity to serve additional customers. Of the districts surveyed, those in the Ukiah - Redwood Valley area are in the best condition to serve additional customers, with the exception of Calpella which has been determined by Regional Water Quality Control Board to be at capacity. The Hopland Public Utility District and Brooktrails Community Services District also have capacity for new customers. An earlier study conducted in 1979 showed that the Fort Bragg Municipal Improvement District also has capacity for both additional water and sewer customers.

TABLE 53  
WATER AND SEWER DISTRICT CAPACITY

	Existing Water Connections		Existing Sewer Connections		Capacity for new Connections		Additional Capacity Planned Before 1990	Funding Secured?	Proposed New Capacity	
	Residential/Commercial		Residential/Commercial		Water/Sewer				Water/Sewer	
Brooktrails Comm. Services Dist.	625 SFD 35 MFD	7	595	7	3000	600+	YES	YES	3000	2000 <sup>1</sup>
Calpella County Water District	67	12	59	12	0	600 <sup>2</sup>	YES	NO	200	
Caspar South Water District			42	0		34	NO			
Caspar South <sup>3</sup> Service Company	103				0		NO		0	
Covelo Comm. Services Dist.			132	117		0	YES	NO	Unk.	
Hopland Public Utility Dist.	165	28	144	28	70	200	YES	NO	100	
Irish Beach Water District	107	0			25		YES	YES	90	90
Laytonville Co. Water District	170	45			0		YES	NO	40+	
Mendocino City Comm. Svcs. Dist.			238	90		328	NO			
Mendocino County Waterworks No. 2			20	10+		0	YES	NO	Unk.	
Millview County Water District	220	188			100		YES	NO	500+	
Pacific Reefs Water District	11	0			questionable		UNK.	NO	13	
Redwood Valley Co. Water District	730	20			325		YES	NO	400	
Rogina Water Co.	710	26 (Irrigation)			200		YES	YES	0	
Ukiah Valley Sanitation Dist.			2000	965		2400	NO			
Westport County Water District	62	5	61	5	40±	40	YES	YES	0	0
Willow County Water District	781	43			800±		YES	NO	800	

SOURCE: Mendocino County Community Development Commission Survey, June, 1984.

1. City of Willits sewer plant will need to be expanded to accommodate more than 1200 connections from Brooktrails Community Services District.
2. A letter from the Regional Water Quality Control Board dated August 23, 1985, states that the Calpella facility is at capacity.
3. Information from telephone conversation with Jane Cleary, Secretary.



## CONSTRAINTS TO HOUSING PRODUCTION

The maintenance, improvement and development of housing is restricted by both governmental and non-governmental constraints. Although the distinction becomes somewhat unclear in the case of governmental regulations imposed in recognition of non-governmental constraints such as hazards or environmental values, it is generally accepted that governmental constraints include such limitations as are imposed by general plans, zoning and land division regulations, conditions of permit approvals, building codes, fees and procedures. Non-governmental constraints include cost and availability of financing, costs of labor and building materials, and site acquisition and development costs. In general, governmental constraints are those over which government agencies have control. Non-governmental constraints are factors which cannot be altered by the government. For the purposes of a county housing element, governmental constraints are further limited to those constraints which can be influenced or controlled by the County's elected officials.

### Government Constraints

#### Land Use Controls

The County's regulations are largely required by state law. Section 65300 of the California Government Code requires that the County adopt a General Plan. Section 65860 requires that the County have a Zoning Ordinance consistent with the General Plan. The Subdivision Map Act requires that the County regulate divisions of land in accordance with specified provisions. The State Housing Law requires the County to impose and enforce building construction standards. The California Environmental Quality Act (Public Resources Code Section 21151) requires that the County consider the potential environmental impact of projects and require an environmental impact report for any project which may have a significant effect on the environment. The California Coastal Act requires that the County prepare a plan for the Coastal Zone according to policies in the Act which give priority to public access, visitor-serving facilities, coastal-dependent activities and resource conservation. The California Timberland Production Act requires that Timberland be zoned for timber production.

The various state laws cited above not only require the County to adopt regulations, but also establish the procedures to be used by the County in considering applications for projects regulated thereby. Fees, while not required by state law are necessary to cover the costs of carrying out state-required programs and due to the reduction of state money available to counties since the passage of Proposition 13, fees must more closely reflect actual costs.

The County's land use goals and policies are expressed in the General Plan, and are implemented through zoning and land division regulations. At the present time Mendocino County actually operates under two General Plans and Zoning Ordinances, one for the Coastal Zone and one for the inland portion of the County. The County's General Plan was substantially revised in 1981, and a new Zoning Ordinance adopted in 1982, however they only apply to the inland



portion of the County. The Coastal Zone remains under the old General Plan and Zoning Ordinance until the Coastal Plan is certified by the Coastal Commission, zoning for the Coastal Zone is adopted and the court injunction lifted.

The land use element of the new General Plan was developed with extensive public participation. Fourteen citizen advisory committees participated over a period of six years in formulating recommendations for community planning areas. Numerous public hearings were held by both the Planning Commission and Board of Supervisors. As finally adopted, the General Plan provided considerable room for additional growth.

Following adoption of the General Plan in 1981, a new Zoning Ordinance was adopted and the County was entirely rezoned, with the exception of the Coastal Zone. Densities and minimum parcel sizes allowed by zoning are in nearly all cases identical to those allowed by the General Plan. In areas where the General Plan and zoning do not allow densities as high as might otherwise be possible, it is generally in recognition of potential hazards such as flooding, or to avoid conflicts with other uses such as agricultural operations. As can be seen from the information presented in Tables 43 and 44 there are ample vacant lands available for residential development. In the inland portion of the County over half the existing residential-zoned parcels are vacant. In the Coastal Zone slightly less than half are vacant. Because parcel size is not readily available for a large percentage of parcels in the County, accurate estimates of the number of parcels that could be created are difficult to achieve. Tables 43 and 44 do show that the number of vacant residential parcels could be nearly doubled without rezoning any land in the County. If the number of vacant and potential vacant parcels are considered together with the provisions for second units, the number of dwelling units in the County could potentially be increased seven-fold.

### Building and Housing Codes

Building construction in Mendocino County is regulated by the 1982 Uniform Building Code, the 1982 Uniform Mechanical Code, the 1982 Uniform Housing Code, the 1979 Uniform Building Code Standards, the 1979 Uniform Code for the Abatement of Dangerous Buildings, the 1982 Uniform Fire Code, the 1982 Uniform Swimming Pool Code, the 1982 Uniform Sign Code, the 1982 Uniform Plumbing Code, the 1984 National Electric Code, and the State Historic Building Code. The County has adopted several amendments to the uniform codes, most of which are intended to relax requirements for owner-built houses. Provisions are made for alternative sewage disposal systems. Performance requirements for heating facilities are relaxed to allow wood stoves as the primary heating system. Connection of dwellings and accessory buildings to electrical power is made optional, and electrical wiring may be installed by the owner/builder.

In addition the County has adopted building code ordinances to provide for the certification of the many homes in the County constructed without building permits. Both the Clean Slate and the Class K regulations are efforts to provide avenues for certification of dwellings built without permits and the construction of new structures at a reduced cost. The County continues to study various means to resolve the problem of dwellings built without permits, as few of the owners have taken advantage of the provisions adopted to date.

During the past 15 years an unknown number of dwellings have been constructed without permits in rural portions of the County. While it has not been possible to make an accurate count of the unauthorized dwellings in the County, estimates vary in the range of in excess of 1,000 (General Plan, Page I-116), to 1,800 (Clean Slate, Page 1).

The County has made several attempts to deal with such dwellings built without permits without much success. Early instances of unauthorized dwelling construction were largely ignored. When the County began to talk about building code enforcement and abatement in the 1970's the result was the formation of United Stand, a group made up predominantly of residents of dwellings built without benefit of permit who resisted the County's enforcement attempts to a stalemate. The principle objective of United Stand was to seek a legislative resolve to the controversy. The County recommended that United Stand pursue Class K legislation at the State level, as the County was not enabled to pass it without State authority. In 1981 Class K was adopted by the State, enabling counties and cities to adopt it at the local level. In July 1980 the County enacted the Clean Slate program for certifying dwellings built without permits. The Clean Slate program provided relaxed building requirements for unauthorized dwellings constructed prior to December 31, 1979. Originally adopted for one year, Clean Slate was subsequently extended through December 31, 1983. Two hundred twelve applications were submitted under the Clean Slate program, approximately 50 continuing through the program to certification. In 1982 the County provided another alternative to the Uniform Building Code for certifying dwellings built without permits, the Class K standards. The requirements of Class K allow more leeway than those of the Uniform Building Code, however, non-standard construction requires approval of the building inspector. Approval by an architect or engineer is typically required. The cost of the design work often is greater than the savings realized by the proposed non-standard construction. Twenty-four applications have been submitted under Class K. In December 1985 the County adopted the BLUR II General Plan and Zoning Ordinance amendments which establish a simplified program by which residential property, developed without going through the conventional building permit review process, may be certified.

Neither Class K or Clean Slate were ever intended to resolve zoning conflicts or density problems. Thus applicants who built or purchased property with dwellings built without permit often found themselves unable to utilize these programs.

There have been three noted opportunities for owners to correct these deficiencies. In 1982 the County included within its General Plan the Intent Section, good for a period of one year. In 1983 the County implemented SB 1534 and its provisions without restriction except in the Coastal Zone, and in 1985 (effective February to July 1982) adopted BLUR II, a program enabling owners to again seek certification of dwellings built without benefit of permit where a land use violation exists.

These programs are instrumental in the application of Clean Slate, Class K, and the broadened UBC as many owners found they could not apply for a construction permit if there was an inconsistency with the General Plan.

The County is actively pursuing the current program to certify these structures.



Dwellings constructed without regard for code requirements are generally less expensive than code dwellings, however the savings are often at the expense of structural integrity, safety and sanitation. Due to the cost of required design work, Class K does not really provide much of an option. Even under the Uniform Building Code alternative construction details are possible provided they are approved by an architect or engineer. Similarly alternative sewage disposal systems are also possible, but again acceptance by the Health Department depends upon demonstration by the applicant through professional design that the system will perform properly. The result is that Class K does not really provide any significant savings over construction possible under the uniform codes.

## Site Improvements

Conditions required for approval of minor subdivisions (four lots or fewer) vary with each application. Typically conditions will include soil permeability tests and soil profiles and access easements and road improvements if the parcels are not on a County road. An encroachment permit will be required if work is to be done within a County right of way.

Required road improvements are generally a 10-foot or 16-foot wide rocked road. Occasionally a chip-sealed road is required. Conditions imposed on major subdivisions (five or more lots) are more stringent. Paved roads, curbs and gutters and underground utilities are often required.

## Fees

The fees that the County may charge for processing applications are limited by state law to the estimated costs actually incurred. The County's current fees were adopted in November 1983 and are based on an analysis of permit processing costs. A comparison of Mendocino County's fees with those charged by cities within the County and neighboring counties is presented in Table 54. The comparison shows Mendocino County's fees to be in line with fees charged by other jurisdictions.

## Procedures

Procedures for processing permits in Mendocino County are largely determined by requirements and limits imposed by the state. Requirements for environmental review, noticing, advertising, and public hearings establish the minimum time necessary to process an application. State law also requires that applications for development permits in most cases be processed within six months or else be granted automatic approval. Generally applications receive final County determination within two to three months.

One exception is General Plan amendment applications. At the present time it is taking between one and two years from application submission to final approval. Part of the reason for the extensive time required is the state limitation of four General Plan amendments per year. The County has adopted a policy of hearing amendment applications individually for preliminary approval, then grouping a number of applications into a single General Plan amendment which is then heard again for final approval. The effect of this policy is that each application must go through the entire hearing process twice. The other factors contributing to the delay include the large number of applications submitted after the General Plan was adopted in 1981, and the staff time available to process General Plan amendment applications.

TABLE 54  
COMPARISON OF APPLICATION FEES

	MENDOCINO COUNTY	LAKE COUNTY	HUMBOLDT COUNTY	SONOMA COUNTY	UKIAH	FORT BRAGG
General Plan Amendments	\$425*	\$500-700*	\$470*	\$400*	\$350*	\$300*
Change of Zone	350*	250-500*	345*	260*	200*	200*
Subdivisions			195* +\$20/lot over two			
Minor	250*	235*		160*	30*	100*
Major	350*	370-450* +\$1/lot		420* +\$4/lot	100* +\$5/lot	100* +\$15/lot
Use Permits						
Administrative	50		60			
Zoning Administrator	150*	100*				
Planning Commission	300*	200*	135*	240*	10*	50-100*
Environmental Review	50	60-100	35	100	50	25-100
EIR	25/hr.	25 + 2% of contract	800 + costs	100 + 8% of contract	0	cost

SOURCE: Planning and Building Services.

\* Environmental Review Fee must be added.

TABLE 55  
COMPARISON OF SELECTED WATER DISTRICTS' FEES

DISTRICT	CONNECTION FEE	3/4" METER MONTHLY SERVICE CHARGE	WATER
Rogina	1	\$4.80	47¢/750 gal up to 2250 then 62¢/750 gal.
Willow	\$250.00 + mtl. & lbr.	\$7.50	40¢/1000 gal in excess of 4500 gal
Millview	\$750.00 + mtl. & lbr.	\$14.00	55¢/1000 gal over 7500 gal
Redw. Vly.	\$500 + cost + 10%	\$15.00	\$1.25/1000 gal over 10,000 gal
North Gualala	1	\$5.65	\$1.09/750 gal up to 2250 then \$1.64/750 gal

SOURCE: Planning and Building Services

1. None if only meter installation is required. Otherwise materials and labor.

Only one of the pending General Plan amendment applications would result in any significant number of residential parcels if approved. The application submitted by the Vichy Springs Investors Group to increase the density on a 110 acre parcel from one unit per acre to approximately three units per acre is to accommodate a 250± unit residential development. Given the location of the proposed project in an undeveloped area similar to areas earlier developed with expensive homes, it is unlikely that the project would directly result in housing opportunities for lower income families. The remainder of the pending General Plan amendment applications, if developed to their maximum potential, would provide for approximately 45 additional residences.

Governmental constraints in the Coastal Zone include all of the same constraints that exist inland with the addition of constraints that are unique to the Coastal Zone. The Coastal Zone continues to be subject to the terms of the injunction imposed as a result of Adams vs. Mendocino County in which the old General Plan was found to be inadequate. The injunction prohibits most land divisions and rezonings, and limits the issuance of use permits. Applications that are allowed by the injunction still must receive Coastal Commission approval before they may proceed. Coastal Commission applications generally require one to two months for processing, with a maximum period of 50 days.

#### Non-governmental Constraints

Non-governmental constraints are those conditions limiting the availability of housing over which local government has little or no control. State law requires that the housing element contain an analysis of non-governmental constraints upon the maintenance, improvement or development of housing for all income levels as a basis for possible action by the local government to offset the effects of these constraints. The principle types of non-governmental constraints are the availability of financing, the price of land and the costs of site improvements and construction.

#### Availability of Financing

Interest rates for financing the cost of construction have been the most erratic and problematic component of the housing costs associated with home-ownership and rental payments in recent years. Interest rates impact the sales price or rental rates in two distinct ways. The first is the interest rate charged for the construction loan itself. Usually, a developer obtains construction financing for a period of one year at interest rates equal to, or slightly above the prime interest rate. The cost of borrowing construction money is then passed on to the buyer in the form of a higher selling price for the structure.

The second and most noticeable way interest rates affect the prospective buyer or renter is the rate charged for long term mortgage financing. Mortgage interest rates have fluctuated between 8 and 18 percent over the last ten years. The interest rate on a conventional 30-year fixed rate mortgage currently runs about 12 percent, plus loan origination fees and other closing costs ranging from 5 to 7½ percent of the loan amount.



Because so many families have been unable to qualify for home loans at the higher interest rates, sellers, buyers, and financial institutions have created a wide variety of financing techniques, including mortgages with balloon payments, graduated payments, appreciating equity, and adjustable interest mortgages.

Assuming an FHA 12 percent interest rate on a house selling for \$73,000\* with a 10 percent down payment, leaving a balance of \$65,700, amortized over a 30-year period, the mortgage payment would exceed \$675 per month. Taxes, insurance, and utilities would amount to an additional \$200 - \$400 per month. Using these figures, the exemplified house would cost approximately \$975 per month to own and operate. Using the 25 percent ratio of housing cost to annual income previously mentioned, the household in their situation should have an annual income of \$46,800. At 30 percent of housing cost to income, the household should have an annual income of \$39,000.

It is important to emphasize that housing alternatives in the unincorporated areas of Mendocino County defy typification. Combining the essential elements, the way one would describe a typical suburban house, is limited by the range of diverse factors affecting housing production. In general, though, financing is less attainable in the unincorporated area than in urban areas because households lack the necessary income to save for a down payment and qualify for a loan. The attainability of funds for major repairs and home improvement loans (current at 12 3/4 to 14 1/2 percent interest rates) is likewise limited by inability to pay.

#### Price of Land

The price of land has risen at a fast rate since the early 1970's. Land costs vary considerably depending on location, zoning and community amenities. Coastal home sites are more costly than sites located inland. A 6,000 square foot lot with water and sewer available may be obtained for between \$5,000 and \$15,000. A 12,000 square foot parcel with water or sewer costs about \$35,000 to \$37,500. Unimproved one acre lots run from about \$35,000 to \$42,000. For more rural large parcels, costs vary even more. Five acre lots range from approximately \$39,500 to \$65,000 and forty acre lots are priced on the average from \$55,000 to \$79,000. Some of the major factors influencing the price of rural unimproved parcels include but are not limited to location, availability, legal access and useability of the site.

#### Site Improvements

Site improvements include such items as land clearing, pad set-up, site utilities and direct access to the house from a public or private road. Costs depend on the type of development, parcel size and topography. Where available, water and sewer hookups range from \$500 to \$2,500. Water well development ranges from \$3,000 to \$10,000. Septic systems range from \$2,500 to \$5,000. Alternative greywater systems cost on the average from \$1,500 to \$2,000.

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\*This does not include sales and marketing costs of about 6 percent and closing costs ranging on the average from 5 to 7½ percent of sales price.

## Construction Costs

Construction costs for conventionally constructed dwellings run from \$38 to \$100 per square foot, with the average cost at about \$53 per square foot (strictly construction costs). This means that construction costs for a conventional three bedroom, two bath, 1,400 square foot house costs about \$74,200. The average construction cost for the type of multifamily housing found in the unincorporated area, duplexes, triplexes and quadriplexes, is about \$60 per square foot.

## Environmental Constraints

Several types of environmental constraints restrict the availability of land for housing in Mendocino County. The San Andreas Fault, capable of an estimated Magnitude 8.3 earthquake, poses the most serious hazard, not only from fault rupture along its trace but from severe ground shaking throughout many portions of the County. The recently discovered Maacama Fault may pose a hazard to Mendocino County as serious as the San Andreas Fault because it is in the Ukiah-Willits population corridor. Estimates of the Maacama Fault's capability range from a low of 6.5 to a high of 8.1 Magnitude. The California Division of Mines and Geology has prepared maps delineating Special Studies Zones within which geologic studies are required for certain types of construction.

Rocks of the Franciscan Assemblage underlie more than 90% of the County. Due to the long tectonic history which has fractured, sheared and deformed these rocks, they are often unstable when hillside slopes are 20% or more. Consequently, landslides and soil creep are frequent throughout many of the County's hillsides.

Coastal areas are susceptible to geologic and seismic hazards not found in inland areas. Bluff erosion results from the undercutting of sea cliffs by ocean waves. Seismically-induced water waves, known as tsunamis, may be generated thousands of miles away and gain sufficient height, when they reach the Mendocino coast, to inundate low lying coastal areas. Tsunamis of heights exceeding 100 feet have been reported along coasts of the Pacific Ocean.

Flooding is a constraint along the Russian River and many of the smaller streams in the County. The Federal Emergency Management Agency has prepared maps delineating the 100 year flood boundaries within which dwellings must be elevated above the anticipated flood elevation. The potential for inundation due to dam failure affects areas below five dams in the County, the largest being Coyote Dam just above Ukiah.

Each of the above environmental constraints either limits the amount of land available for residential construction or results in increased costs due to special conditions imposed.

## COASTAL HOUSING

Section 65590 of the Government Code contains special requirements that apply to housing in the coastal zone. Generally the section requires that the demolition or conversion to other use of low-income housing be prohibited unless equivalent replacement housing is provided. It also requires that new housing developments within the coastal zone include low-income housing.

Existing dwelling units occupied by persons of low or moderate income may not be demolished or converted to non-residential use unless provision is made for replacement of the units within three years. A dwelling unit is considered to be occupied by persons of low or moderate income if the person or family was evicted from the dwelling within one year prior to the filing of the application to convert or demolish the unit. Section 65590 provides five exceptions to the replacement requirement:

1. Structures containing fewer than three dwelling units or groups of structures containing ten or fewer dwelling units.
2. Residential structures converted or demolished for "coastal dependent" or "coastal related" uses consistent with a certified coastal plan.
3. Conversions or demolitions within a jurisdiction having less than 50 acres of vacant privately owned land within the coastal zone or within three miles of the coastal zone (Not applicable in Mendocino County).
4. Conversions or demolitions within a jurisdiction having an established procedure for the collection of in-lieu fees which will result in the creation of replacement units.
5. Demolition of a residential structure that has been declared to be a public nuisance.

Table 20 summarizes building permits issued in the coastal zone since January 1, 1983. Prior to 1983 the building permit log contains no indication of whether or not a permit is within the coastal zone, consequently the table indicates information for 1980-82 is "not available". Table 19 indicates that fourteen demolition permits were issued during the 1980-82 period. Of these, only one was issued by the coastal office. A review of that permit showed it to be in the coastal zone and that it was for the demolition of a vacant single family dwelling. None of the other demolition permits issued within the coastal zone were for residential buildings. Whether or not the one demolished coastal zone residence had been occupied by low or moderate income persons is not known, however, replacement was not required under the exemptions provided in Section 65590.

Since December 1978 the coastal zone has been under an injunction prohibiting rezonings and divisions of land and limiting the approval of use permits. Consequently there has been little development in the coastal zone. Only one new housing development has been approved, the 54 unit Hills Ranch Planned Unit Development near Mendocino. As a condition of approval the developers paid in-lieu fees of \$150,000 to the Community Development Commission which used the funds to make down payments on 28 units in Fort Bragg which are being rehabilitated and rented to families of low and moderate income.



## EVALUATION OF THE 1981 HOUSING ELEMENT

Housing Element Law requires each local government to review its housing element to evaluate all of the following:

1. The appropriateness of the housing goals, objectives and policies in contributing to the attainment of the state housing goal.
2. The effectiveness of the housing element in attainment of the community's housing goals and objectives.
3. The progress of the county in implementation of the housing element.

The previous assessment of housing needs and inventory of resources and constraints relevant to the meeting of these needs and the following evaluation form the basis for the County's policies, goals, and implementation program for the maintenance, improvement and development of housing.

Of the nine goals stated in the previous housing element, one is retained as adopted, five are retained as revised, two are combined into one revised goal, and one is deleted as a goal and expressed as a policy. Goal revision is intended to clarify the ultimate purpose of efforts to address issues required under State Housing Element Law as well as identified needs.

Quantified objectives for assistance for renters and owners in the incorporated cities are no longer appropriate, since the cities are responsible for developing their own objectives. Assistance objectives for the unincorporated area need to be revised to incorporate them in specific implementation measures and programs which relate to goals and policies.

Of the 38 policies in the previous housing element, one is retained as adopted, 19 are retained as revised, 10 are deleted as effectively completed or redundant, six are deleted as policies and otherwise restated and two are deleted or inappropriate.

The effectiveness of the previous housing element has been limited by a lack of relevant detailed information, staff resources and program funding. A sharper definition of goals is also needed. Goals and policies need to be clarified to backup program selection decisions. To judge the effectiveness of implementation measures, programs should be revised so that the various impacts of each program are identified, and that the resource needs of the program are considered over time in light of the availability of such resources. New policies and programs should contribute maximally to goal attainment within the various constraints of reality.

Specific actions taken to implement policies are summarized as follows:

1. Planning, Community Development Commission and Local Agency Formation Commission staff collaborated to prepare the Mendocino County Housing Needs Plan.



2. County, Community Development Commission and Community Based Organization staff participated in a housing task force to identify emergency and special housing needs, and coordinated efforts with the City of Ukiah to secure Community Development Block Grant funding for acquisition and rehabilitation of an emergency shelter for the homeless.
3. The County adopted Class K regulations in 1981, as well as modifications to the Uniform Building Code. The zoning ordinance contains provisions for small lot subdivisions, density transfer, clustering and density bonuses. The County has adopted the BLUR II General Plan and Zoning Ordinance amendments that provide opportunities for homeowners to obtain permits for houses built without permits.
4. The County Zoning Ordinance allows 4,000 square foot lots in manufactured home subdivisions. Provisions in the Zoning Ordinance and Land Division Ordinance allow conversion of existing mobile home parks to individual lots.
5. Mendocino County requires no fee demolition permits for all housing units which are proposed to be removed from the housing inventory.
6. The County has adopted an ordinance for the protection of archaeological resources.
7. The County enforces State Energy Conservation Standards and has modified the Uniform Building Code to facilitate wood heating of dwellings and alternative energy sources.
8. The General Plan, Uniform Building Code and Zoning Regulations have been modified to allow higher densities in specific areas. Urban areas serviced by sewers and other urban amenities have a range of urban densities and housing types consistent with the community's character, so that housing can be made available to households having a wide range of income.

Progress made in implementing Housing Element Programs since the previous Housing Element was adopted is summarized as follows:

1. The Community Development Commission of Mendocino County obtained an additional 89 units of HUD Section 8 Rental Assistance (for a total of 504 units) and 99 units of Section 8 Moderate Rehabilitation which are dispersed throughout the county. In 1985, Community Development Commission also obtained a funding commitment for the first 28 units of HUD Housing Vouchers in Mendocino County.
2. Community Development Commission obtained HUD funding and developed 60 units of Low Income Public Housing in the City of Willits. Land acquisition for the project was leveraged with Community Development Block Grant funds obtained on behalf of the city by the County. A Low Income Public Housing funding commitment was obtained

to develop 30 family units in the unincorporated area, but when no available sites were acceptable to HUD, those units were transferred to the City of Fort Bragg.

3. Using in lieu fees from the Hills Ranch Development to leverage Housing Authority Reserves, Community Development Commission acquired 28 family units in the coastal zone. Twenty of those units have been rehabilitated and the remaining units are out to bid.
4. In 1983, the County applied for and was successful in obtaining both General Allocation and Native American Setaside State Community Development Block grant (CDBG) funds for housing rehabilitation on the Yokayo, Guidiville, Redwood Valley, and Pinoleville Rancherias. Under the CDBG Program, 36 units were rehabilitated. Bureau of Indian Affairs funds were also utilized to leverage CDBG funds.

Other unsuccessful steps taken to implement Housing Programs include: applications for state CDBG funds for housing rehabilitation; California Housing Advisory Service; Low Income Public Housing; additional increments of both Section 8 Existing and Moderate Rehabilitation; Home Management Service; and several attempts to develop both single and multiple family Mortgage Revenue Bond Programs.



## GOALS, POLICIES AND IMPLEMENTATION

### Goal 1

Strengthen coordination among public and private agencies to promote education and communication concerning housing problems and possible solutions.

#### Policy 1.1

The County shall encourage private developers, builders and financial institutions to work with public agencies in formulating strategies to solve local housing problems.

#### Policy 1.2

The County shall maintain a Planning Information Counter containing available housing and related information and shall encourage utilization of the center by public and private agencies and persons.

##### Implementation Measure 1.2.1

Planning and Building Services shall maintain a Planning Information Center containing housing related information including: housing, income and employment data, census data, permits and licenses, energy conservation, and environmental reports. Planning and Building Services will solicit contributions to the center by appropriate sources and encourage use of the center.

##### Time Frame

Continuous.

#### Policy 1.3

The County shall examine housing needs across jurisdictional boundaries and accept responsibility for meeting its needs.

##### Implementation Program 1.3.1

The County, as a member of the Mendocino Council of Governments (MCOG) will participate in the review and update of the Mendocino County Housing Needs Plan.

##### Responsible Agencies

MCOG, Planning and Building Services, Community Development Commission.

##### Time Frame

1992

## Goal 2

Provide adequate sites for all types of residential development.

### Policy 2.1

The County shall encourage the development of presently undeveloped residential parcels served by public water and public sewer for optimum development potential under the Zoning Ordinance.

#### Implementation Measure 2.1.1

The county shall maintain an inventory of vacant residential land served by public water and/or public sewer service.

#### Responsible Agencies

Planning and Building Services, Data Processing.

#### Time Frame

Continuous.

### Policy 2.2

The County shall continue to provide for development of single mobile homes and mobile home parks in residential zones throughout the county in accordance with the requirements of Government Code Section 65852.3 and 65852.7 and consistent with General Plan residential land use densities.

#### Implementation Measure 2.2.1

The county shall amend its zoning ordinance to permit mobile home parks subject to approval of a major use permit on all land classified by the General Plan and zoned for residential use as required by California Government Code Section 65852.7.

#### Responsible Agencies

Planning and Building Services, County Counsel.

#### Time Frame

1986.

### Policy 2.3

The County shall continue to allow second residential units as provided by Section 20-185 of the County Zoning Ordinance.



#### Policy 2.4

The County shall continue to provide for density bonuses for developments containing at least 25 percent of the total units for persons or families of low or moderate income or at least 10 percent of the total units for lower-income households as provided in Government Code Section 65915.

#### Policy 2.5

The County shall seek federal and state funding for necessary planning and engineering studies, improvements to and expansion of sewer and water lines and facilities for special districts in the county when and where appropriate.

#### Policy 2.6

The County shall require the inclusion of residential units for low and moderate income families or payment of in-lieu fees in new developments within the coastal zone, where economically feasible, pursuant to Government Code Section 65590.

##### Implementation Measure 2.6.1

The county shall adopt an ordinance providing for the assessment and collection of in-lieu fees in connection with new residential development within the coastal zone.

##### Responsible Agencies

Planning and Building Services, Community Development Commission, County Counsel.

##### Time Frame

1986.

#### Goal 3

Assure the development and provision of affordable housing.

#### Policy 3.1

The county shall promote and encourage home ownership by utilizing available federal and state programs.

##### Implementation Program 3.1.1

Single Family Mortgage Revenue Bonds and/or Mortgage Credit Certificates. The proceeds of the Bonds/Certificates will be targeted as follows: 90 percent to first time home-buyers for acquisition of new housing and acquisition of existing housing with qualified rehabilitation.

Responsible Agency

Community Development Commission of Mendocino County.

Objective

50 units.

Time Frame

1992.

Implementation Program 3.1.2

California Housing Advisory Service. The California Department of Housing and Community Development provides grant funds to Housing Authorities or non-profit housing agencies to assist individuals and groups with self-help construction or rehabilitation of their houses. A new component of the program would also provide that mortgage assistance may be made available to eligible households as a deferred payment loan, as an interest subsidy, or in some other form of mortgage assistance. Such funds could also be used for development costs prior to final use as mortgage assistance.

Responsible Agency

Community Development Commission of Mendocino County.

Objective

30 units.

Time Frame

1986 - 1990.

Policy 3.2

The county shall encourage innovation in housing development so long as health, safety and public welfare are not endangered.

Policy 3.3

The County shall encourage the construction and provision of affordable rental housing units using available federal and state programs.

Implementation Program 3.3.1

HUD Low Income Public Housing - Federal aid to local public housing agencies to provide decent shelter for low-income residents at rents they can afford.

Responsible Agency

Community Development Commission of Mendocino County.

Objective

50 units of family housing.

Time Frame

1992

Implementation Program 3.3.2

California Housing Finance Agency Multifamily Rehabilitation and Infill New Construction Program - New construction loans for development of small rental properties of 2 to 19 units for 24 years, amortized for 30 years and secured by first deed of trust.

Responsible Agency

Community Development Commission of Mendocino County.

Objective

50 units.

Time Frame

1992.

Implementation Program 3.3.3

Federal National Mortgage Association (Fannie Mae) Mortgage Backed Securities Pooled Multi-Family Mortgage Revenue Bonds.

Fannie-Mae's Municipal Mortgage Enhancement Plan, called Muni Mai, provides AAA credit support for tax-exempt housing bonds. The plan can be used with bonds financing residential rental projects which meet the requirements of Section 103(b)(4)(A) of the Internal Revenue Code. Fannie Mae provides collateral and credit support during the construction period, and it provides a permanent take-out for the long-term mortgages. Permanent mortgages must generally meet the underwriting requirements of Fannie Mae's Conventional Multifamily Mortgage Plan.

Responsible Agency

Community Development Commission of Mendocino County.

Objective

50 units.

Time Frame

1992.

Implementation Program 3.3.4

HUD Section 8 Rental Assistance/Housing Vouchers. A rent subsidy for very low income households to help them afford decent housing in the private market. The eligible tenant provides up to 30 percent of his/her monthly income for a rental unit and HUD makes up the difference. The subsidy goes with the tenant, but is paid directly to the landlord.

Responsible Agency

Community Development Commission of Mendocino County.

Objective

100 additional units

Time Frame

1986 - 1992.

Policy 3.4

The county shall encourage the development of affordable housing for the elderly, disabled, handicapped and other lower-income households by local non-profit agencies which utilize federal and state program funds not available to the county.

Policy 3.5

The Community Development Commission of Mendocino County shall continue to work with other government agencies and jurisdictions, non-profit community based organizations and the private sector to develop and implement programs to address special housing needs.

Implementation Program 3.5.1

State Community Development Block Grant Allocation for Native Americans. The State allocates 1.25 percent of the total State CDBG funds available for Native American Indians not recognized as Indian Tribes under 42 USC 5302(a)(17).

Responsible Agency

Community Development Commission of Mendocino County.

Time Frame

1986 - 1992.

Implementation Measure 3.5.2

The County shall seek funding, such as a portion of State CDBG Administrative funds, to further assess farmworkers' housing needs.

Responsible Agency

Community Development Commission of Mendocino County.

Time Frame

1986 - 1988.

Implementation Program 3.5.3

Farmworker Housing Grant Fund. The funds are intended in part to leverage other funds and to assist in the development of farmworker housing that would otherwise not be built. The funds may be used for almost any construction related cost in developing farmworker housing. Up to 50 percent matching funds will be provided.

Responsible Agency

Community Development Commission of Mendocino County/Private Sector.

Objective

See 3.5.4.

Time Frame

1988 - 1992.

Implementation Program 3.5.4

Farm Labor Housing Loans and Grants (FMHA Section 514/516). Farmers Home Administration provides grants and loans to finance construction, rehabilitation or acquisition of rental housing for farmworkers.

Responsible Agency

Community Development Commission of Mendocino County/Private Sector.



Objective

50 units of farmworker housing.

Time Frame

1988 - 1992.

Policy 3.6

The County shall continue to encourage and support efforts to provide emergency housing.

Implementation Program 3.6.1

Emergency Shelter Program. The Program provides grant funds to the government and non-profit organizations providing shelter to homeless persons. Local Federal Emergency Management Agency (FEMA) boards receive and prioritize applications from their area before forwarding all applications to the California Department of Housing and Community Development for ranking and award announcement.

Responsible Agency

FEMA Board, Community Development Commission of Mendocino County and local non-profit organizations.

Time Frame

1986 - 1992.

Implementation Program 3.6.2

The County shall formally recognize a functioning task force for emergency shelter. The County shall appoint an official representative to the task force and request that incorporated cities each also appoint a representative.

Responsible Agency

Mendocino County Board of Supervisors.

Time Frame

1986 and continuous.

Goal 4

Remove government constraints to the development and provision of affordable housing for households of all income levels.

#### Policy 4.1

The county shall modify building and housing regulations that are determined to be unnecessarily restrictive.

#### Policy 4.2

The county shall periodically review the permit application process and make modifications if necessary to achieve efficient processing of all applications.

#### Policy 4.3

The county shall give priority to the processing of applications for residential developments that include low and moderate income units.

##### Implementation Measure 4.3.1

The county shall adopt a revised fee schedule which reduces permit fees for residential developments that include low or moderate income units.

##### Responsible Agencies

Planning and Building Services, Community Development Commission of Mendocino County, Board of Supervisors.

##### Time Frame

1987.

#### Policy 4.4

The County shall place an Article XXXIV Referendum on the ballot upon request of a local government agency or citizens group willing to advocate such a measure.

##### Implementation Measure 4.4.1

The County shall monitor the development of assisted housing which depletes its Article XXXIV Referendum Authority in the unincorporated area.

##### Responsible Agency

Community Development Commission of Mendocino County.

##### Time Frame

Continuous.

#### Implementation Program 4.4.2

Article XXXIV Housing Referendum. The State Constitution requires local voter approval in order for any public body to develop lower income rental units. Any development of new rental units where the majority of tenants are low income by the Housing Authority or California Housing Finance Agency, therefore, would require the ballot measure. The cost of placing the measure would rest with the County. Funding efforts for passage of the measure would rest with a local housing advocate.

##### Responsible Agency

County of Mendocino, Community Development Commission of Mendocino County.

##### Objective

To initiate solicitation of an additional 100 units of Article XXXIV Referendum Authority before current 100 unit Authority is completely committed.

##### Time Frame

Ongoing as required.

#### Goal 5

Improve and conserve the existing housing stock.

##### Policy 5.1

The County shall encourage the private rehabilitation of housing by establishing a tax code enforcement program.

##### Implementation Measure 5.1.1

California Revenue and Taxation Code Section 17299 denies the deductions to owners of substandard rental property. Denying the deductions for interest, taxes and depreciation are a tool for upgrading substandard units. Complaints of substandard conditions would be referred to Planning and Building Services which would inspect substandard units and notify the state.

##### Responsible Agency

Planning and Building Services.

##### Time Frame

1988.

## Policy 5.2

The County shall continue to encourage the rehabilitation of substandard residential units occupied by lower income households by utilizing Federal and State programs.

### Implementation Measure 5.2.1

Conduct housing condition surveys necessary to assess housing rehabilitation needs. Identify rehabilitation target areas, average cost per unit, and eligible participants sufficient to develop viable housing rehabilitation programs.

#### Responsible Agency

Community Development Commission of Mendocino County.

#### Time Frame

Ongoing.

### Implementation Program 5.2.2

State Community Development Block Grant (CDBG) Program. Created by the Housing and Community Development Act of 1974, the CDBG Program is targeted toward lower income households to improve housing and economic conditions. Eligible activities include housing rehabilitation loans, public facilities improvements, and low interest loans to businesses that create or retain jobs.

Funding is allocated by Congress to the State, and is administered by the California Department of Housing and Community Development (HCD). Funding of local grant applications is competitive and occurs on an annual basis. Counties and cities are eligible applicants.

#### Responsible Agency

Community Development Commission of Mendocino County.

#### Objective

Rehabilitate 100 housing units occupied by lower income owner and renter households.

#### Time Frame

1986 - 1992.

### Implementation Program 5.2.3

Special Circumstances Program. Households living on fixed incomes derived from Social Security (SSI) benefits are eligible for up to

a \$1,500 grant to correct health and safety deficiencies in the housing unit to to install necessary energy efficiency devices to reduce utility costs. The County can make local residents aware of the program.

Responsible Agency

Funding and administration is provided to eligible recipients by the local office of the Social Security Administration. Eligible household must apply through their caseworkers.

Time Frame

1986 - 1992.

Implementation Measure 5.2.4

Ten percent of the proceeds of Single Family Mortgage Revenue Bonds will be targeted toward qualified rehabilitation loans (Ref. Implementation Program 3.1.1).

Responsible Agency

Community Development Commission of Mendocino County.

Objective

20 units.

Time Frame

1992.

Policy 5.3

The County shall minimize displacement while conducting housing rehabilitation programs.

Policy 5.4

The County may waive building permit fees for Housing Rehabilitation conducted by the Community Development Commission of Mendocino County in accordance with Minute Order of January 8, 1980.

Policy 5.5

Federal, State or local funds for housing rehabilitation shall not be made available to non-permit and/or non-code dwellings which have not come into compliance with the permit process.



## Policy 5.6

The County shall require the replacement of housing occupied by low and/or moderate income families when converted or demolished within the coastal zone, where economically feasible, pursuant to Government Code Section 65590.

### Implementation Measure 5.6.1

Planning and Building Services shall amend the application form for demolition permits in the coastal zone to obtain information necessary to comply with California Government Code Section 65590.

#### Responsible Agencies

Planning and Building Services, County Counsel.

#### Time Frame

1986.

## Policy 5.7

Land use, building and health violations not made legal through amnesty provisions adopted by the county shall be remedied through existing civil, criminal and administrative enforcement procedures.

### Implementation Measure 5.7.1

The county shall adopt and enforce ordinances establishing penalties for violations of building and health codes.

#### Responsible Agencies

Planning and Building Services, Department of Environmental Health, County Counsel, Board of Supervisors.

#### Time Frame

1986 and continuing.

## Policy 5.8

The County shall continue to monitor condominium conversions.

## Goal 6

Promote equal housing opportunities for all persons regardless of race, religion, sex, marital status, ancestry, age, national origin, or color.

### Policy 6.1

The county shall promote the enforcement activities of the State Fair Employment and Housing Commission.

#### Implementation Program 6.1.1

Coordinate Fair Housing Activities with the State Fair Employment and Housing Commission. The State Fair Employment and Housing Commission (FEHC) is the agency established for monitoring and enforcing fair housing practices throughout the state. The county will provide information to interested residents, and housing discrimination complaints will be referred by the county to Redwood Legal Assistance and/or the FEHC for a resolution of the complaint or legal sanctions where appropriate.

##### Responsible Agency

Community Development Commission of Mendocino County.

##### Time Frame

1986 - 1992.

#### Policy 6.2

The county shall encourage local fair housing programs.

##### Implementation Program 6.2.1

Community Housing Resource Board. Grants are available through the U.S. Department of Housing and Urban Development for administrative expenses required to set up a local non-profit fair housing program. The program may have several components including the establishment of a referral service, monitoring of existing fair housing activities, and working with local realtors and property owners to establish fair housing practices throughout the county.

##### Responsible Agency

Community Development Commission of Mendocino County.

##### Time Frame

1986 - 1992.

#### Policy 6.3

The county shall adopt an ordinance prohibiting discrimination in housing based on race, age, handicap or disability.

##### Implementation Program 6.3.1

The District Attorney's Office or the County Counsel's office shall process complaints which shall be prosecuted or referred to the Mendocino County Community Development Commission for additional referrals to local or state agencies. These agencies include, but are not limited to, Redwood Legal Assistance and the State Department of Fair Employment and Housing.

Responsible Agency

District Attorney, County Counsel, Community Development Commission, Redwood Legal Assistance, FEHC.

Time Frame

1987.

Goal 7

The county shall encourage maximum energy conservation in new and existing dwellings.

Policy 7.1

The county shall continue to enforce the State energy conservation standards.

Policy 7.2

The county shall continue to encourage the use of weatherization programs in conjunction with housing rehabilitation programs.

Implementation Program 7.2.1

The county will continue to utilize the resource of local agencies (e.g. North Coast Energy Services) specializing in energy conservation programs to leverage housing rehabilitation program funds.

Responsible Agency

Community Development Commission of Mendocino County.

Time Frame

1986 - 1992.



## SUMMARY OF QUANTIFIED OBJECTIVES

The Housing Element of the General Plan must include quantified objectives which specify the maximum number of housing units that can be constructed, rehabilitated and conserved within the five-year time frame of the Housing Element, based on the needs, resources, and constraints identified in the Housing Element. The following table summarizes Mendocino County's housing needs and quantified objectives for the time period between January 1, 1986 and January 1, 1992.

TABLE 56

### QUANTIFIED OBJECTIVES

January 1, 1986 - January 1, 1992  
Mendocino County Unincorporated Area

	NEEDS	OBJECTIVES	
	Number of Units	Program Units	Private Sector Units
New Construction <sup>1</sup>			
Very Low Income	804	100	704
Other Low Income	525	60	465
Moderate Income	680	120	560
Above Moderate Income	1,082		1,082
Rehabilitation and <sup>2</sup> Conservation	3,955	130 100	3,725

1. New construction needs are based on five year proportion of new construction needs identified in Table 39.
2. Rehabilitation and conservation needs are based on mid-point of estimated range of housing rehabilitation needs.





APPENDIX 1

FARMWORKER HOUSING SURVEY

The Community Development Commission of Mendocino County is conducting this survey to assess farmworker's housing needs. All responses are confidential.

Please check and/or fill in all applicable information below:

1. The total number of persons (including myself) in my immediate family (living at the same residence with me) is \_\_\_\_\_.
2. The total number of other persons (excluding myself and my immediate family) living at the same residence with me is \_\_\_\_\_.
3. My/our primary source of income is agricultural employment: \_\_\_\_\_ Yes \_\_\_\_\_ No.
4. I am/we are \_\_\_\_\_ seasonal \_\_\_\_\_ regular worker(s).
5. If seasonal, \_\_\_\_\_ local \_\_\_\_\_ intrastate \_\_\_\_\_ interstate.
6. My/our gross income for the last taxable year was less than \$\_\_\_\_\_.  
(Include: wage before deductions, public assistance, unemployment benefits, social security, pensions, alimony, child support, any other source of income received regularly).
7. I/we \_\_\_\_\_ own \_\_\_\_\_ rent my/our residence.
8. My/our monthly mortgage payment/rent (including utilities except telephone) is \$\_\_\_\_\_.
9. The number of rooms in my residence (include: living room; dining room; enclosed porches; kitchen; bedroom; furnished attic or basement. Exclude: hallways, utility rooms; half-rooms; and bathrooms) is \_\_\_\_\_.
10. The condition that best describes my house is: \_\_\_\_\_ sound \_\_\_\_\_ needs minor repair \_\_\_\_\_ needs major repair \_\_\_\_\_ beyond repair.

(Optional)

11. Name: \_\_\_\_\_  
Mailing Address: \_\_\_\_\_ Zip \_\_\_\_\_  
Residence Address: \_\_\_\_\_ Zip \_\_\_\_\_  
Telephone Number: (\_\_\_\_\_) \_\_\_\_\_

Thank you for taking the time to fill out this survey.

Community Development Commission of Mendocino County  
405 West Perkins  
Ukiah, CA 95482



## ENCUESTA DE VIVIENDA DE CAMPESINOS

LA COMISION DEL DESARROLLO DE LA COMUNIDAD DEL CONDADO DE MENDOCINO esta conduciendo esta encuesta para evaluar las necesidades de vivienda. Todas las respuestas son - confidenciales.

POR FAVOR MARQUE Y/O LLENE TODA LA SIGUIENTE INFORMACION QUE SEA APLICABLE:

1. El numero total de personas (incluyéndome a mi) en mi familia inmediata (que viven en la misma residencia conmigo) es: \_\_\_\_\_.
2. El numero total de otras personas (excluyéndome a mí y a mi familia inmediata) que viven en la misma residencia conmigo es: \_\_\_\_\_.
3. Mi/nuestro sostenimiento principal es mi/nuestro trabajo en el campo:  
Yes \_\_\_\_\_ No \_\_\_\_\_.
4. Yo soy/NOSOTROS somos trabajadores: TEMPORALES \_\_\_\_\_ REGULARES \_\_\_\_\_.
5. Si ES/SON trabajador/res: \_\_\_\_\_ LOCAL \_\_\_\_\_ entre el Estado de California.  
\_\_\_\_\_ fuera del Estado de California.
6. MI/NUESTRO salario neto durante el último año fue menos de \$ \_\_\_\_\_.  
(Incluya: sueldos antes de las deducciones, asistencia publica (Welfare), beneficios de desempleo, seguro social, pensiones, sostenimiento por parte del esposo/a (por divorcio, separacion), sostenimiento de niños, o cualquier otra clase de dinero que usted reciba regularmente.)
7. Yo soy/ Nosotros somos: \_\_\_\_\_ Propietario/s \_\_\_\_\_ Rento/Rentamos  
Mi/nuestra residencia.
8. Mi/Nuestra amortización mensual incluyendo utilidades (exceptuando teléfono) es de \$ \_\_\_\_\_.
9. El numero de cuartos en mi residencia (incluyendo: sala, comedor, patios encerrados, cocina, dormitorios, cuarto para almacenar o cuarto abajo de la casa. Excluyendo: pasillos, cuarto de lavar, medio cuartos, y baños) es de \_\_\_\_\_.
10. La condición que mejor describe mi casa es: \_\_\_\_\_ buena  
\_\_\_\_\_ necesita una pequeña reparación \_\_\_\_\_ necesita una mayor reparación  
\_\_\_\_\_ no se puede reparar.

(OPCIONAL)

11. NOMBRE \_\_\_\_\_  
Dirección para el correo \_\_\_\_\_ Zona postal \_\_\_\_\_  
Dirección de su residencia \_\_\_\_\_ Zona postal \_\_\_\_\_  
Telefono: (\_\_\_\_) \_\_\_\_\_.

Gracias por el tiempo que usted ha tomado para llenar esta encuesta.

Comision del Desarrollo de la  
Comunidad del Condado de Mendocino  
405 West Perkins  
Ukiah, CA 95482

California Human Development Corp.  
185 Seminary Ave.  
Ukiah, CA 95482  
Phone: (707) 462-8791





# APPENDIX 2

## QUESTIONNAIRE ON EMERGENCY HOUSING AND SPECIAL HOUSING NEEDS

Please complete this questionnaire and return it by April 4th to: Steven Prochter,  
Department of Social Services, P. O. Box 1060, Ukiah, CA 95482

Agency responding to questionnaire: \_\_\_\_\_

Please answer the questions based on your best information (estimate are acceptable) on  
the unmet need on an annual basis.

### Section One: Emergency Housing Unmet Needs

1. Do clients of your agency have difficulty in obtaining emergency housing?  
Yes \_\_\_\_\_ number per year \_\_\_\_\_  
No \_\_\_\_\_ (If no please proceed to Section Two: Special Needs)
2. Are your clients individuals or in families?  
Number of Individuals \_\_\_\_\_  
Number of Families \_\_\_\_\_
3. For those clients who do have emergency housing problems how many annually fall into  
the following categories: (If families please give data for head of household)
  - a. Age: under 18 \_\_\_\_\_ 18-21 \_\_\_\_\_ 22-34 \_\_\_\_\_ 35-44 \_\_\_\_\_ 45-55 \_\_\_\_\_  
55 and over \_\_\_\_\_
  - b. Sex: Female \_\_\_\_\_ Male \_\_\_\_\_
  - c. Last Residence:
 

Ukiah Area _____	Redwood Valley _____	Potter Valley _____
Anderson Valley _____	Hopland _____	North Coastal _____
South Coastal _____	Willits _____	North of Willits _____
Out of County _____		
  - d. Special Problems: (handicapped, small children, etc.,) \_\_\_\_\_

4. What is the specific problem faced in finding emergency housing by number of  
clients?

Number of Clients

No money	_____
Emergency totally unavailable	_____
Emergency housing not available at night	_____
Other	_____
Please specify: _____	

5. How many of these clients are local residents or transients?  
Local residents \_\_\_\_\_  
Transients \_\_\_\_\_
6. On the average how long did the clients have the emergency housing problem before it  
was resolved? \_\_\_\_\_
7. What resources do you use for this problem now? \_\_\_\_\_
8. What solution would you suggest for this problem? \_\_\_\_\_

Section Two: Special Needs in Permanent Housing

1. Do clients of your agency have difficulty in their permanent housing situation?  
Yes \_\_\_\_\_ Number per year \_\_\_\_\_  
No \_\_\_\_\_
2. Are your clients individuals or in families?  
Number of individuals \_\_\_\_\_  
Number of families \_\_\_\_\_
3. For those clients who do have problems with their permanent housing how many fall into the following categories: (If families please give data for head of household)
  - a. Age: under 18 \_\_\_\_\_ 18-21 \_\_\_\_\_ 22-34 \_\_\_\_\_ 35-44 \_\_\_\_\_ 45-55 \_\_\_\_\_  
55 and over \_\_\_\_\_
  - b. Sex: Female \_\_\_\_\_ Male \_\_\_\_\_
  - c. Last Residence:  
Ukiah Area \_\_\_\_\_ Redwood Valley \_\_\_\_\_ Potter Valley \_\_\_\_\_  
Anderson Valley \_\_\_\_\_ Hopland \_\_\_\_\_ North Coastal \_\_\_\_\_  
South Coastal \_\_\_\_\_ Willits \_\_\_\_\_ North of Willits \_\_\_\_\_  
Out of County \_\_\_\_\_
  - d. Special Problems: (handicapped, small children, etc.,) \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_
4. Is the client renting or a home owner?  
Number of renters \_\_\_\_\_  
Number of owners \_\_\_\_\_
5. Does the client live in an rural or urban area?  
Number living in rural areas \_\_\_\_\_  
Number living in urban areas \_\_\_\_\_
6. On an average how long has the client had a housing problem? \_\_\_\_\_
7. What is the specific housing problem by number of clients?
  - \_\_\_\_\_ a. No permanent housing available
  - \_\_\_\_\_ b. Location (isolation)
  - \_\_\_\_\_ c. Cost (is shelter cost more than 25% of income)
  - \_\_\_\_\_ d. Crowding (more than one person per room in house)
  - \_\_\_\_\_ e. Health and safety (housing is in a condition that endangers health or safety or residents)
  - \_\_\_\_\_ f. Discrimination (denied housing because of family configuration, handicap, race, age, etc.)
  - \_\_\_\_\_ g. Other, please specify: \_\_\_\_\_  
\_\_\_\_\_
8. Type of housing needed:

	# of bedrooms per unit	# of units needed
a. Rentals	_____	_____
b. Private owner	_____	_____
c. Mobile home	_____	_____
d. Boarding home	_____	_____
e. Supervised residence/caretaker	_____	_____
f. Other	_____	_____
9. What resources doe you use for this problem now? \_\_\_\_\_  
\_\_\_\_\_
10. What solution would you suggest for this problem? \_\_\_\_\_  
\_\_\_\_\_

## AGENCIES RESPONDING TO SURVEY

Society of Saint Vincent de Paul  
Indian Youth Diversion  
Seventh Day Adventist Community Center  
Long Valley Health Center  
California Human Development Corporation  
Pilot House  
Mendocino College  
Mendocino County Department of Social Services  
    Adult and Family Services Unit  
    Child Protective Services Unit  
Community Development Commission  
Indian Nutrition Program  
Mendocino County Indian Health Board  
Redwood Coast Seniors, Inc.  
State Department of Mental Health  
Public Health/Division of Substance Abuse  
Ukiah Senior Citizens Center  
Willits Senior Citizens Center  
Homemaker/Home Health of Northern California  
Remedy Home and Health Care Services  
Center for Education and Manpower Resources/Migrant Head Start  
State Department of Rehabilitation  
Employment Development Department - Fort Bragg  
Farmers Home Administration  
Redwood Legal Assistance  
Ukiah Valley Tenants Association  
The Continuum, Inc.



RESULTS ON SURVEY ON  
EMERGENCY HOUSING AND SPECIAL HOUSING NEEDS

The survey was divided into two Sections. Section One asked for need information on Emergency Housing, and Section Two asked for need information on Special Needs in Permanent Housing.

I. Results for Section One: Emergency Housing

- A. To the question "Do clients of your agency have difficulty in obtaining emergency housing?" The response was "yes" for twenty-three agencies and "no" for two agencies.
- B. The combined estimate for the number of persons in need of emergency housing in a year's time was 1499 individuals.
- C. The break-down between individuals and persons in families was 864 individuals and 557 person in families. (These figures do not add up to equal the total need because not all the agencies answered every question).
- D. The responses to the question on special problems related to emergency housing (with the number of agencies citing each problem area listed ) are as follows:
  - 1. Small Children (6 agencies)
  - 2. Health Problems/Handicap (4 agencies)
  - 3. No Funds (3 agencies)
  - 4. Pets (2 agencies)
  - 5. Mental Disability (2 agencies)
  - 6. Alcoholism (2 agencies)
  - 7. Access/Stairs (1 agency)
  - 8. Drug Abuse (1 agency)
  - 9. Racial Problems (1 agency)
  - 10. Non-English Speaking (1 agency)
  - 11. Youth (1 agency)
- E. To the question on the specific problem in finding emergency housing the responses were as follows:
  - 1. No money - 871 instances
  - 2. Emergency housing not available - 667 instances
  - 3. Emergency housing not available at night - 137 instances
- F. To the questions on number of transients and local residents in need, the response was:
  - 1. Local residents - 999
  - 2. Transients - 423



II. Result for Section Two: Special Needs in Permanent Housing

- A. To the question "Do clients of your agency have difficulty in their permanent housing situation?" the response was "yes" for twenty-one agencies and "no" for four agencies.
- B. The combined estimate for the number of persons with permanent housing problems in a year's time was 1810 individuals.
- C. The break-down between individuals and persons in families was 805 individuals and 1005 persons in families.
- D. The responses to the question on special problems related to permanent housing (with the number of agencies citing each problem area) are as follows:
  - 1. Small Children (6 agencies)
  - 2. Cost (5 agencies)
  - 3. Handicapped (3 agencies)
  - 4. Pets (2 agencies)
  - 5. Mental Illness/Behavioral Problems (2 agencies)
  - 6. Large Families (2 agencies)
  - 7. Non-English Speaking (2 agencies)
  - 8. Access/Stairs (1 agency)
  - 9. Alcoholism (1 agency)
  - 10. Developmental Disabilities (1 agency)

APPENDIX 3

MENDOCINO COUNTY HOUSING NEEDS PLAN

ADOPTED BY

Mendocino Council of Governments

December 5, 1983

Revised

March 5, 1984

Revised

August 5, 1985

---

Mendocino Council of Governments

Mendocino County Courthouse

Ukiah CA 95482



## MENDOCINO COUNTY HOUSING NEEDS PLAN

This housing needs plan for Mendocino County has been prepared by the Mendocino Council of Governments in order to assist Mendocino County, the Cities of Fort Bragg, Point Arena, Ukiah and Willits in meeting the requirements of AB 2853 of 1980.

The purpose of a regional housing needs plan is to examine housing needs across jurisdictional boundaries and to allocate to each local government responsibility for planning, in its housing element, to meet those needs.

### METHODOLOGY

The plan divides the County into five housing market areas: the Point Arena market area, the Fort Bragg market area, the Willits market area, the Ukiah Market area, and the Mendocino Unincorporated market area. The Ukiah market is divided into parts: Ukiah and the balance of the area (called Ukiah Unincorporated) (See map)

January 1, 1983 is the base date of the plan. State Department of Finance (DOF) household estimates are used for that date for the County and incorporated cities. The Mendocino County Council of Governments (MCOG) estimated the figure for the Ukiah Unincorporated Area based on the DOF figures, Mendocino County

Planning and Building Services, and Community Development Commission population estimates.

Based on 1980 U.S. Census data, MCOG estimated the numbers of households in each group in 1983 in five areas of the County and the County as a whole. For the Ukiah market area, estimates for the incorporated and unincorporated areas were made to provide discreet household information for the City of Ukiah. It was assumed that the income distributions in the 1980 Census are still applicable in 1985.

Household projections were made for July 1, 1992. These projections are based on DOF projections for county-wide population growth. The Cities of Ukiah and Fort Bragg, and Mendocino County Unincorporated market areas' share of the county-wide growth is based on the assumption that there will be a continuation of the historical household growth pattern that occurred between 1980 and 1983. It was assumed that the Ukiah Unincorporated area, and hence the whole Ukiah market area, would grow at the same rate as the City of Ukiah. The Point Arena and Willits market areas' share of the county-wide growth is based on Mendocino County Planning and Building Services, Community Development Commission and local estimates.

The 1992 income group allocation of the plan for the Ukiah market area is a "same share" plan. Same share means that both Ukiah and



the Ukiah Unincorporated areas are assigned the same proportions of households in 1992 in the four income groups. A "same share" allocation for the Ukiah market area was used because there is equal access throughout the area for employment opportunities, and both the City and adjoining areas are considered to be equally suitable locations for lower income households seeking housing.

The 1992 income group allocation for the Point Arena area are adjusted to encourage housing development to offset the concentration of low income persons.

The Fort Bragg, Willits and Mendocino County Unincorporated market areas were not included in the "same share" allocation because they may be viewed as separate housing market areas. The projected 1992 income group percentage breakdowns for these parts of the County are the same as their 1983 estimates.

The plan also contains basic construction needs for seven areas of the County. Attachment 2 contains the methodology used in calculating the basic construction needs. Allowances for vacancies and normal market removals are included.

#### HOW TO USE THE PLAN IN PREPARING LOCAL HOUSING ELEMENTS

The principle uses of the plan are in planning to accommodate the projected growth of the area and to provide opportunities for all income groups to have access to housing throughout each housing market area.

In addition to the income group estimates and allocations contained in the plan, the local housing elements are to contain estimated affordability needs. This involves making estimates of the current number of lower income (very low and other lower income categories) households who pay more than 25% of their income for housing.

Other existing household needs which are to be included in local housing elements but which are not included in the regional plan include estimates of overcrowding, estimates of the needs of special groups, and estimates of substandard physical condition of the housing stock. Estimates of substandard units should include both estimates of the units which need rehabilitation and the units which are so substandard that they need to be removed. The basic construction needs in the plan do not include allowances for construction needs which result from the need to remove units which are beyond repair or are not economically feasible to repair. Units which are removed from the housing stock in the normal course of housing market activity (demolitions, changes to commercial use, etc.) are not necessarily the substandard units. Consequently, the basic construction needs are to be supplemented by estimates of construction needed because of the need to remove units which are in poor physical condition.

# MENDOCINO COUNTY

Estimated Households by Income Group January 1, 1983

and

Projected Households on July 1, 1992 with Income Group Allocations

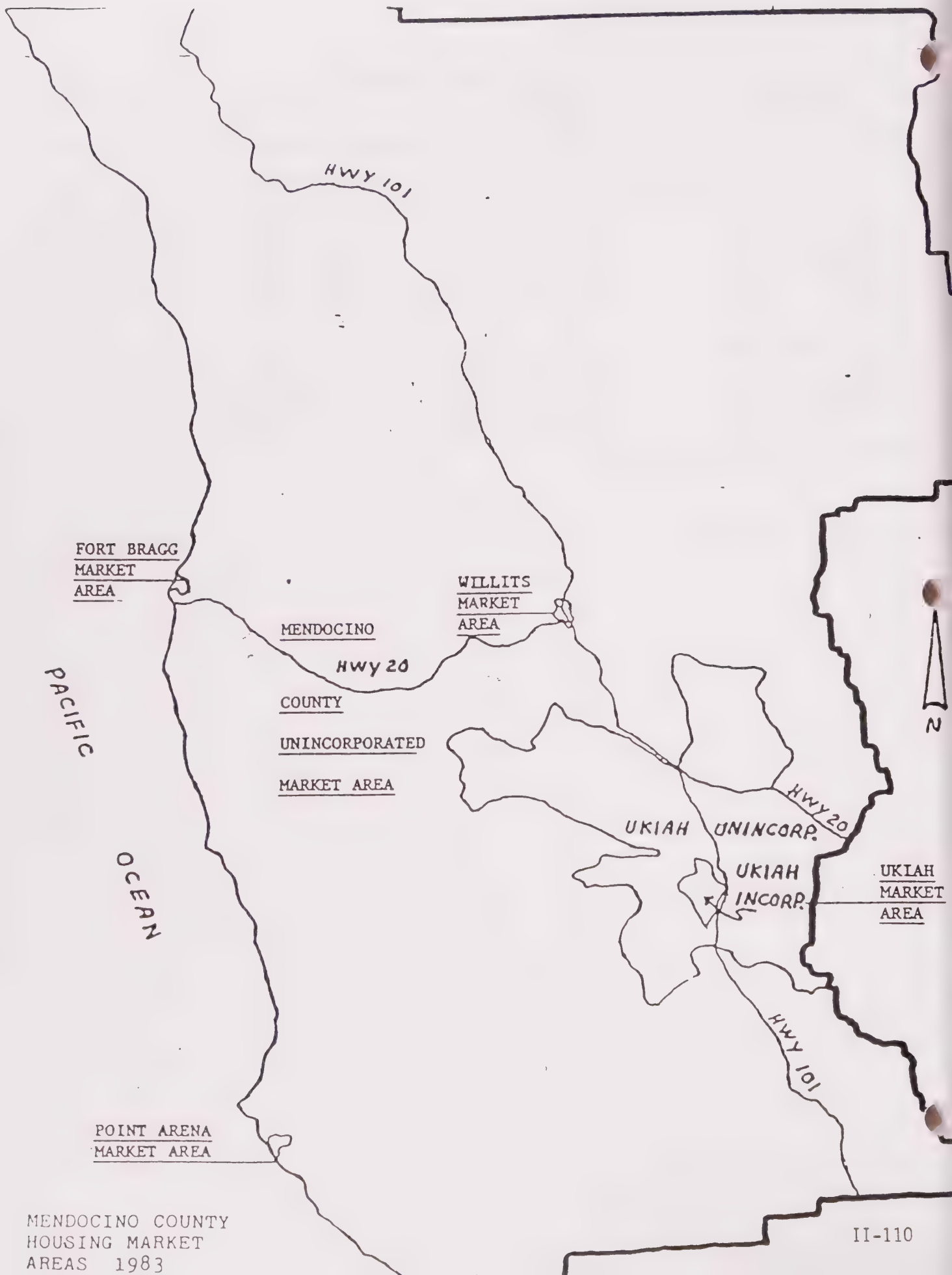
Area	Income Group	<u>Households</u>		<u>Percentages</u>	
		1983	1992	1983	1992
Point Arena	Very Low	81	86	45	42
	Other Lower	20	24	11	12
	Moderate	31	37	17	18
	Above Moderate	<u>49</u>	<u>57</u>	<u>27</u>	<u>28</u>
	Total	181	204	100	100
Fort Bragg	Very Low	603	724	26	26
	Other Lower	394	474	17	17
	Moderate	603	724	26	26
	Above Moderate	<u>719</u>	<u>864</u>	<u>31</u>	<u>31</u>
	Total	2,319	2,786	100	100
Willits	Very Low	423	517	28	28
	Other Lower	211	257	14	14
	Moderate	377	462	25	25
	Above Moderate	<u>498</u>	<u>611</u>	<u>33</u>	<u>33</u>
	Total	1,509	1,847	100	100
Ukiah	Very Low	1,288	1,368	26	23
	Other Lower	743	952	15	16
	Moderate	1,040	1,368	21	23
	Above Moderate	<u>1,881</u>	<u>2,261</u>	<u>38</u>	<u>38</u>
	Total	4,952	5,949	100	100
Ukiah Unincorporated	Very Low	865	1,404	17	23
	Other Lower	864	977	17	16
	Moderate	1,220	1,404	24	23
	Above Moderate	<u>2,135</u>	<u>2,319</u>	<u>42</u>	<u>38</u>
	Total	5,084	6,104	100	100
Ukiah Market Area	Very Low	2,037	2,772	21	23
	Other Lower	1,620	1,929	16	16
	Moderate	2,329	2,772	23	23
	Above Moderate	<u>4,050</u>	<u>4,580</u>	<u>40</u>	<u>38</u>
	Total	10,036	12,053	100	100

Area	Income Group	<u>Households</u>		<u>Percentages</u>	
		1983	1992	1983	1992
Mendocino County Unincorporated Market Area	Very Low	3,350	4,188	27	27
	Other Lower	2,085	2,637	17	17
	Moderate	2,817	3,412	22	22
	Above Moderate	<u>4,324</u>	<u>5,273</u>	<u>34</u>	<u>34</u>
	Total	12,576	15,510	100	100
County Total	Very Low	6,655	8,100	25	25
	Other Lower	4,259	5,184	16	16
	Moderate	6,123	7,452	23	23
	Above Moderate	<u>9,584</u>	<u>11,664</u>	<u>36</u>	<u>36</u>
	Total	26,621	32,400	100	100

# BASIC CONSTRUCTION NEEDS

<u>AREA</u>	<u>CONSTRUCTION NEEDED</u> <u>1/83 to 7/92</u>	
Point Arena	12	
Fort Bragg	494	
Willits	236	
Ukiah Incorporated	965	
Ukiah Unincorporated	841	
Ukiah Market		1,806
Mendocino County Unincorporated	1,629	
MENDOCINO COUNTY TOTAL	4,177	





## ATTACHMENT 1

### DEFINITIONS OF INCOME GROUPS

The income limits for a four person household in Mendocino County are the following:

Very Low Income	Income not exceeding 50% of the median family income of the county.
Other Lower Income	Income between 50% and 80% of the median family income of the county.
Moderate Income	Income between 80% and 120% of the median family income of the county.
Above Moderate Income	Income above 120% of the median family income of the county.

Income limits for other household sizes are calculated using household size adjustment factors. For example, the income limit for a one person household is .7 times the four person income limit for that income level.



## ATTACHMENT 2

### METHODOLOGY FOR ESTIMATING BASIC CONSTRUCTION NEEDS

1. Determine housing units needed on July 1, 1992, with allowance for vacant units.

1992 Households  
+1992 Households X Estimated Homeownership Rate X allowance for vacant-for-sale  
+1992 Households X Estimated Renter Rate X allowance for vacant-for-rent.

---

=1992 Households plus vacant-for-sale or rent

+ number on last line X estimated "other vacant" fraction (allowance for second homes and other vacant units which are not for sale or rent).

---

= Housing Units Needed in 1992

2. Determine housing units needed to accommodate growth needs from 1983 to 1992

Housing Units Needed in 1992 (determined in Step 1)  
-Housing Units on January 1, 1983

---

=Housing Units Needed to Accommodate Growth

3. Determine expected normal housing market removals (units to be torn down, boarded up, destroyed by fire, changed to commercial use, etc.)

Average Number of Housing Units in Existence between 1983 and 1992 = (Housing Units Needed in 1992 + Housing Units on 1/1/1983) - 2.

Estimated Number of Units to be Removed in 9.5 Years = Average Number of Units (see above) X Annual Removal Rate X 9.5

4. Determine Total Basic construction Needs 1983 to 1992

Housing Units Needed to Accommodate Growth (determined in Step 2)  
+Housing Units Expected to be Removed 1983-1992 (determined in Step 3)

---

=Total Basic Construction Needs 1983 to 1992





## APPENDIX 4

### PERSONS CONTACTED

1. Bruce Alfano, Mendocino County Economic Development Corporation.
2. Cheryl Baker, Rural Communities Housing Development Corporation.
3. Steve Bowne, State of California Rehabilitation Department.
4. Ardith Brower, Century 21 Realty.
5. Delia Gonzales, California Human Development Corporation, Migrant 402 Program.
6. Darlene Hoffman, Northern Circle Indian Housing Authority.
7. Phil Ingoglia, Northern Woodcraft.
8. Ron Jaeger, California Department of Rehabilitation.
9. Rose Marie, Mendocino County Board of Realtors.
10. Pat McCormick, U.S. Department of the Interior Bureau of Indian Affairs.
11. Dr. Craig McMillan, County of Mendocino, Department of Public Health.
12. Timothy Morrison, Redwood Legal Services.
13. Paul Mueller, California Department of Rehabilitation.
14. William Schrage, Schrage Mobile Homes.
15. Don Sinclair, Weeks Drilling and Pump Company.



### III. CIRCULATION



# MENDOCINO COUNTY GENERAL PLAN

## CIRCULATION ELEMENT

ADOPTED BY

MENDOCINO COUNTY BOARD OF SUPERVISORS

APRIL 18, 1981

REVISED:

SEPTEMBER 24, 1981

Mendocino County Planning Department  
Office: 589 Low Gap Road  
Mail: Courthouse  
Ukiah, CA 95482





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## CIRCULATION ELEMENT

### I. INTRODUCTION/DESCRIPTION

#### A. Purpose

The purpose of a Circulation Element of the General Plan is defined by Government Code Section 65302 (b):

"A circulation element consisting of the general location and extent of existing and proposed major thoroughfares, transportation routes, terminals, and other local public utilities and facilities, all correlated with the land use element of the plan."

#### B. Use of Regional Transportation Plan (RTP) (See Appendix A)

The requirements for the development of a Circulation Element and RTP are very similar. The Office of Planning and Research (OPR) has determined that 31 non-urbanized regional transportation agencies within California may adopt their RTP, if adopted in accordance with Government Code Section 65080, as their Circulation Element provided that the agency include discussions of all requirements set forth in Section 65302 (b).

Mendocino Council of Governments (MCOG), as the transportation planning agency for Mendocino County, adopted an update in April 1981 to the Regional Transportation Plan (adopted May 1975). Since Mendocino County is identified as a "non-urbanized region" (OPR letter January 8, 1981) we will utilize the 1975 RTP and subsequent updates as the basis for development of a Circulation Element.

### II. ISSUES

- A. Effects of the Land Use Element on the Regional Transportation Plan.
- B. Adequacy of road classification system.
- C. Adequacy of road classification standards.
- D. Balance among different transportation modes.
- E. Efficiency of existing systems.
- F. Maintenance of existing systems.
- G. Financial constraints.
- H. Environmental considerations.
- I. Potential of private roads to be dedicated for county roads due to land use density.
- J. Development standards for private roads.
- K. Extension and connection of private roads.
- L. Priorities of new construction.
- M. Effect of energy shortage on transportation system.

### III. FINDINGS - DESCRIPTION OF EXISTING FACILITIES

#### A. Highways

##### 1. State Highways (See map)

The State highways passing through Mendocino County form the

backbone of the County's road network. Route 101, the Redwood Highway, is the principal south-north link, while Route 20 is the principal west-east link with adjacent regions. Route 101 and Route 20 easterly from Route 101 are considered Routes of Statewide Significance.

Route 1 is the coastal highway. It serves coastal communities from the Sonoma County Line north to Rockport. Route 1 is a two-lane facility except for two short stretches of four-lane highway.

Route 20 passes through the County in two sections: (a) from the coast at Noyo through the mountainous Jackson State Forest to a junction with Route 101 in the City of Willits and (b) from Route 101 between Calpella and Redwood Valley over the north end of Lake Mendocino through Lake County. From the coast to Route 101, Route County line, Route 20 is a two-lane highway except for 0.6 mile of four-lane highway.

Route 101, the most heavily traveled highway in the County, is the main north-south travel corridor of the north coast region. It has been upgraded to four-lane freeway or expressway standards at several locations. However, many sections of two-lane conventional highway still remain.

Route 128 runs from the coast between Albion and Elk southeasterly to Cloverdale in Sonoma County and thence to Napa County and the Sacramento Valley. Route 128 is a two-lane highway.

Route 162 is a two-lane highway from Route 101, 13 miles north of Willits, to Covelo. Beyond Covelo, Route 162 is an adopted legislative State highway but maintenance of the facility is the responsibility of the County.

Route 175 is a two-lane highway through mountainous terrain from Hopland to a junction in Lake County with Route 29 between Lakeport and Kelseyville.

Route 208 is a two-lane highway from Route 1 at Rockport to Route 101 at Leggett.

Route 222 is a two-lane highway approximately two miles in length from Route 101 to the former State Hospital at Talmage.

Route 253 is a two-lane highway which connects Route 101 three miles south of Ukiah with Route 128 near Boonville.

Route 271 is the old two-lane State highway between Cummings and the Mendocino-Humboldt County Line.

a. Functional Classification (A list of classified highways appears in Appendix B.)

"Functional Classification" serves as a common language state-wide, briefly, the highway Functional Classifications are:

Urban

Principal Arterials  
 Type I  
 Type III  
 Type IV  
 Minor Arterials  
 Collectors  
 Local

Rural

Principal Arterials  
 Minor Arterials  
 Connectors  
 Collectors  
 Major  
 Minor  
 Local

b. Level of Service - State Highways

Level of Service is a planning tool used to determine highway deficiencies. The Highway Capacity Manual establishes six levels of service for highway facilities. The levels of service are designated "A" through "F", from best to worst, and cover the entire range of traffic operations that may occur. Each level of service includes a range of operating conditions bounded by values of travel speed and by the ratio of volume-to-capacity. Traffic conditions, minimum speeds and types of facilities for each level of service are outlined as follows:

<u>Level of Service</u>	<u>Type of Facility</u>	<u>Minimum Speed</u>	<u>Traffic Conditions</u>
A	All	Unlimited	Free flow, low volumes at high speeds
B	Multilane Freeway Two-lane	55 50	Stable flow with some traffic restrictions on speed
C	Multilane with Access Control Rural Multilane Two-lane Rural	50 45 40	Speed and maneuverability are more closely controlled. Drivers are restricted to select speed or change lanes, etc.
D	Urban Freeway Rural Multilane Rural Two-Lane	40 35 35	Unstable traffic flow. Fluctuations in volume--low comfort and convenience condition may be tolerated for short periods
E	All	30+-	Volume at or near capacity with momentary stoppages
F	All	30+-	Forced flow volume above capacity of the facility. Substantial speed reduction effected by congestion. Stoppages for short or long periods.

Each State highway has associated with it a desired level of service. These desired levels of service for State Highways are as follows for each 1995 Functional Classification:

<u>Functional Classification</u>	<u>Desired Level of Service</u>	<u>Terrain</u>
Rural		
Arterials	B	Most conditions
	C45	Extremely mountainous
Minor	B	Flat terrain
	C45	Rolling, or flat with large percentage of local service
Connector	C	Moderate or mountainous
	D	Extremely mountainous
	C45	Flat
	C	Rolling or moderate
	D	Mountainous or where primarily local service provided
Urban		
All Functional Classifications	D	Urban areas
	C	Suburban areas

While level of service is an effective planning tool on State Highways, it does not yield meaningful information on the lesser traveled county roads and city streets. Operational deficiencies on these roads must be determined by other methods.

c. Needs and Deficiencies

Route 101 should be completed to full freeway standards as rapidly as possible and the direction of work should be from the southern boundary of the County northward. Other than Route 101, freeway construction should be discouraged anywhere in the County.

Route 20 should be improved and upgraded. Safe two-lane standards with truck turnouts of reasonable length would afford coastal residents in the Fort Bragg-Mendocino area easier access to the County seat in Ukiah.

Route 128 should be upgraded. The criteria for improvement should be safety rather than speed. The scenic quality of this route should be preserved and consideration should be given to a combination of Routes 101-20-1 and 128 as a



possible loop route which would facilitate tourist traffic through the County.

Route 1 improvements shall be governed by the County Coastal Element (LCP).

### Coastal Act Requirements

A central concept of the Coastal Act is that development shall, if possible, occur in areas where public services are available. Strictly interpreted, this would direct almost all growth to Fort Bragg. The major public works policy of the Act applicable to Mendocino County is the limitation on capacity improvements to Highway 1.

"30254. New or expanded public works facilities shall be designed and limited to accommodate needs generated by development or uses permitted consistent with the provisions of this division; provided, however, that it is the intent of the Legislature that State Highway Route 1 in rural areas of the coastal zone remain a scenic two-lane road. Special districts shall not be formed or expanded except where assessment for, and provision of, the services would not induce new development inconsistent with this division. Where existing or planned public works facilities can accommodate only a limited amount of new development, services to coastal-dependent land use, essential public services and basic industries vital to the economic health of the region, state, or nation, public recreation, commercial recreation, and visitor-serving land uses shall not be precluded by other development."

### NEEDS AND DEFICIENCIES STATE HIGHWAYS

<u>Functional Classification</u>	<u>Miles Deficient</u>			<u>Needs</u> <u>(Millions 73-74 \$)</u>		
	<u>Now</u>	<u>10-Yr.</u>	<u>20-Yr.</u>	<u>Now</u>	<u>10-Yr.</u>	<u>20-Yr.</u>
<u>Rural</u>						
Principal Arterials	70.9	72.6	77.4	154.5	156.6	157.5
Minor Arterials	134.3	160.9	179.4	133.1	153.4	165.5
Connectors	<u>27.1</u>	<u>42.2</u>	<u>42.2</u>	<u>9.2</u>	<u>10.3</u>	<u>10.3</u>
Subtotal	232.3	275.7	299.0	296.8	320.3	333.3
<u>Urban</u>						
Minor Arterials			<u>1.6</u>			<u>0.3</u>
Subtotal	<u>      </u>	<u>      </u>	<u>1.6</u>	<u>      </u>	<u>      </u>	<u>0.3</u>
TOTAL	232.3	275.7	300.6	296.8	320.3	333.6



## 2. County Roads (See map)

The County road system serves the unincorporated areas of the County by reaching out from the basic highway network established by the State highways. There are several sub-systems of roads which are under County jurisdictional responsibility, namely, the select, non-select, Federal-Aid Secondary, and Federal-Aid Urban systems. The sub-system designations are significant because some of the revenue for highway construction is apportioned and can only be spent on roads in a specific system.

The County road system is primarily a network of two-lane roads, approximately 60 percent of which are paved, all weather roads. The major County roads are included in the Federal-Aid Secondary System. The FAS roads serve the majority of traffic on County roads which is mainly of a local or regional, intra-county character.

There are currently 1,014.25 miles of County roads in the County according to the "Road and Street" Mileage Report" for calendar year 1980. They are distributed by surface type as follows:

Unimproved	26.5 Miles
Graded Earth	137.1 Miles
Gravel	239.3 Miles
Low-Type Bituminous	465.1 Miles
Asphalt Concrete	145.27 Miles
	<u>1,014.25 Miles</u>

### a. Classification System (A list of classified roads appear in Appendix B.)

The purpose of streets and roads within the countywide classification system is to provide a network of transportation corridors for vehicular movement of goods and people, and provide travelways for nonmotorized traffic.

#### (1) Principal Arterial System

The principal arterial system consists of a connected network of continuous routes having the following characteristics:

- i. Serve corridor movements having trip length and travel density characteristics indicative of substantial state wide or interstate travel.
- ii. Serve all, or virtually all, urban areas of 50,000 and over population and a large majority of those with population of 25,000 and over.
- iii. Provide an integrated network without stub connections except where unusual geographic of traffic flow conditions dictate otherwise,

such as to connections to coastal cities and inter-governmental boundaries.

## (2) Minor Arterial System

The minor arterial road system should, in conjunction with the principal arterial system, form a network having the following characteristics:

- i. Link cities, and towns above 5,000 population (and other traffic generators, such as major recreational areas with equivalent capacity for generating and attracting travel over long distances) and form an integrated network providing interstate and intercounty service.
- ii. Be spaced at such intervals, consistent with population density, so that all developed areas of the County are within a reasonable distance of an arterial.
- iii. Constitute routes whose design should be expected to provide for relatively high overall travel speeds with minimum interference to through movement.

## (3) Connectors

- i. They provide connections between the higher order systems serving those corridors that have low-volume/long-trip length characteristics.
- ii. Connectors provide service to any county seat not on a higher system and to the larger towns not directly served by the higher order systems.
- iii. They provide service to mining, agricultural, or recreational areas having State of regional importance not served by the higher order systems.
- iv. Connectors will be found more predominately in the very sparsely developed areas where there are relatively few local roads; e.g., in the desert areas, mountainous and heavily timbered portions of the State, and where there are large public land holdings.

## (4) Collector Road System

The collector routes generally serve travel of primarily regional importance rather than State-wide importance and constitute those routes on

which (regardless of traffic volume) predominant travel distances are shorter than on arterial routes.

#### Major Collector Roads

- i. Provide service to the larger towns not directly served by the higher systems and to other traffic generators of equivalent intraregional importance, such as consolidated schools, shipping points, county parks and important mining and agricultural areas.
- ii. Link the above places with nearby larger towns or cities, or with routes of higher classification.
- iii. Serve the more important intraregional travel corridors.

#### Minor Collector Roads

- i. Spaced at intervals, consistent with population density, to collect traffic from local connectors and local roads and bring all developed areas within a reasonable distance of a collector road.
- ii. Provide service to the remaining smaller communities.
- iii. Serve to link locally important traffic generators.

#### (5) Local Connectors

- i. Provides access to residential, commercial, and agricultural areas not served by a higher system.
- ii. Provides access to local schools, recreational areas and other community facilities.
- iii. Link the Local Road System with Collector Road System.

#### (6) Local Road System

- i. Serve primarily to provide access to adjacent land.
- ii. Provide service to travel over relatively short distances as compared to collectors or other higher systems.
- iii. Constitute the rural mileage not otherwise classified.

b. Needs and Deficiencies

COUNTY ROAD  
MENDOCINO COUNTY ROAD FUND  
ANTICIPATED REVENUES

<u>SOURCE</u>	<u>REVENUE (\$1,000)</u>	
	<u>1980-81</u>	<u>1980-85</u>
LOCAL SOURCES (Property Tax, Vehicle Fines, SB 325, Timber Yield Tax, Trust Funds, Other)	\$ 2,355*	\$ 8,605**
STATE SOURCES (Highway User Tax, Collier-Unruh Funds, Motor Vehicle in Lieu Funds, Storm Damage Reimbursement, State Matching Funds)	2,306***	9,595****
FEDERAL SOURCES (Revenue Sharing, Forest Reserve Funds, FAS, FABR)	1,494	5,800*****
TOTAL	<u>\$ 6,155</u>	<u>\$24,000</u>

FOOTNOTES:

- \* Includes \$807,700 accumulated from prior years to accommodate a specific project or program.
- \*\* Assumes allocation of \$2,233,000 (26% of local source) from SB 325 funds.
- \*\*\* Includes \$169,000 of storm damage reimbursement funds (one time only) and \$272,000 of accumulated or special State matching funds (one time only).
- \*\*\*\* Amount depends on no significant decrease in gasoline sales within California.
- \*\*\*\*\* Assumes \$2,000,000 (35% of federal sources) allocation of Revenue Sharing Funds and \$450,000 (8% of federal sources) allocation (anticipated but uncommitted) of Bridge Rehabilitation and Replacement Funds. Amount shown does not include \$5,753,000 planned for expenditure by the federal government on Mendocino Pass Road during the five year period.





COUNTY ROADS  
MENDOCINO COUNTY ROAD PROGRAM  
ANTICIPATED EXPENDITURES

<u>ACTIVITY</u>	<u>EXPENDITURES (\$1,000)</u>	
	<u>1980-81</u>	<u>1980-85</u>
Administration	\$ 260	\$ 1,575
Operational Overhead	70	435
Equipment Replacement	140	1,225
Maintenance	3,110	19,770
Engineering & Right of Way Acquisition	285	1,725
Operational Improvements	895	5,680
Major (Capital) Improvement	<u>1,330</u>	<u>8,450*</u>
TOTAL CURRENT ROAD PROGRAM	\$ 6,090	\$ 38,860
Expenditure reductions that will be necessary unless unforeseen additional revenues become available:	<u>-----</u>	<u>(\$14,860)</u>
FULLY CONSTRAINED ROAD PROGRAM	\$ 6,090	\$ 24,000

\* Amount shown does not include \$5,753,000 planned for expenditure by the Federal government on Mendocino Pass Road during the five year period.

COMMENTS:

1. Expenditure plan is based on maintaining approximately the same level of service as provided for in the 1980-81 Road Budget. The 1980-81 Road Budget is a financially constrained program. The program is financially constrained because there simply are not enough resources available to meet the identified needs.
2. The constrained expenditure plan exceeds anticipated revenues by nearly 15 million dollars. A substantial portion of road fund revenue sources have remained at a relative constant (in some cases actually decreasing) dollar amount over the past few years while costs have escalated at an alarming rate.
3. Unless new or expanded sources of revenue are developed the road program will have to be further constrained. Such constraints will be applied through the yearly budget process.
4. Federal and State funding assistance can, in most instances, only be used for specific bridge or road projects on the County select road system. These funds are allocated to the County in annual apportionments and in most instances have to

accumulate several years to provide enough funding for bridge and road projects.

5. Local funds are used primarily for planned maintenance on the County road system. Local funds are also used as "match funds" for Federal and State projects.
6. However, all projects in the current 1980-81 road program are needed road and bridge projects. These needs are based on increased traffic volumes, safety hazards, natural road and bridge deterioration and structural deficiency. Many roads and bridges were constructed in Mendocino County for logging purposes and have been established as part of the County road system. These County roads and bridges were never designed or constructed to become permanent facilities. Without increased funding sources many of these needed projects will go unfunded.

Growth and development, as contemplated in the Land Use Element of the General Plan, will require an orderly expansion of the existing system of surface transportation corridors. For the most part this will involve construction of streets within new developments and construction of connecting corridors for access to developing areas.

A comparison of the proposed (1981) Land Use Element and the 1975 Transportation Plan indicated a number of changes in the 1995 functional classification system.

A review of existing average daily traffic (ADT) data on streets and roads serving existing land use and proposed densities, from Land Use Element, promoted alterations in the classification system.

In some areas roads were reclassified, (i.e., from Minor Collectors to Major Collectors) additionally, some roads not previously classified were added to the system due to an increase in population density since 1975, or as a result of proposed land use density which exceeds existing road capacity.

There are also several potential/probable corridor expansion/extensions that have been identified on the basis of existing conditions and/or planned land use. The County hereby adopts the following projects as priorities for future additions to the county maintained road system. Individual priorities will be determined as future development occurs and a greater need for a project arises. They are:

- \* Easterly expansion of Pearl Drive, CR 412A, to connect with Turner Road/Mitchell Creek Drive area.
- \* Northerly extension of Bush Street, CR 250C, to connect with expanding residential, commercial, and industrial development north of Ukiah City Limits and west of State Highway 101 (freeway).

- \* In Fort Bragg Area between Caspar and Cleone---connecting north/south corridors to improve circulation east of State Highway One and relieve local traffic pressures on State Highway One.
- \* Connection of North Harbor Drive with Highway One on the west side of Highway One.
- \* A second/alternative access between Willits and the Brooktrails area.
- \* Easterly extension of Ford Road, CR 250, to connect with Redemeyer Road.
- \* Northerly extension of Redemeyer Road, CR 215A to connect with Lake Mendocino Drive.
- \* Extension of Greeley Street, CR 334C, between Perry Street and Lovell Street.
- \* Extension of Grange Street, CR 334B, between Perry Street and Lovell Street.
- \* Northerly extension of Central Avenue, CR 229, to connect with Uva Drive.

No priority or implementation schedule is implied by identification of these potential/probable corridor expansions/extensions. These corridor expansions/extensions shall be considered in connection with County's long range surface transportation corridor improvement program, governmental capital improvement programs, preparation of specific plans, private development proposals in the vicinity of the corridors, and other activities that would impact the corridors or their intended use.

It is not intended that this list be considered all inclusive. Viable and warranted corridor expansion/extension projects may be implemented that do not appear on the list. Additions and/or deletions to the list may be considered on a timely basis. Re-evaluation of the list shall be made whenever a major amendment to the Land Use Element of the General Plan is contemplated.

#### c. Standards

##### ROAD CLASSIFICATION MINIMUM CORRIDOR STANDARDS

##### PRINCIPAL ARTERIAL SYSTEM

Corridors to be developed to freeway and/or expressway standards established by the California Department of Transportation.

Minimum Right of Way Width	120'
Minimum Lane Width	12'
Minimum Shoulder Width	4' to 8'
Minimum Number of Traffic Lanes	4'

## MINOR ARTERIAL SYSTEM

Minimum Right of Way Width	80' to 100'
Minimum Lane Width	12'
Minimum Shoulder Width	4' to 8'

## CONNECTORS

Minimum Right of Way Width	70' to 100'
Minimum Lane Width	12'
Minimum Shoulder Width	4' to 8'

## MAJOR COLLECTORS

RURAL - Minimum Right of Way Width	60' to 80'
Minimum Lane Width	12'
Minimum Shoulder Width	4' to 8'
URBAN - Minimum Right of Way Width	80' to 100'
Minimum Lane Width	12'
Minimum Shoulder Width	4' to 8'
Parking Lane	Optional

## MINOR COLLECTORS

RURAL - Minimum Right of Way Width	60'
Minimum Lane Width	11'
Minimum Shoulder Width	4' to 8'
URBAN - Minimum Right of Way Width	60' to 80'
Minimum Lane Width (Residential)	11'
Minimum Lane Width (Commercial/Industrial)	12'
Minimum Shoulder Width	4' to 8'
Parking Lane	Optional

## LOCAL CONNECTORS

RURAL - Minimum Right of Way Width	60'
Minimum Lane Width	11'
Minimum Shoulder Width	4' to 8'
URBAN - Minimum Right of Way Width	60'
Minimum Lane Width (Residential)	11'
Minimum Lane Width (Commercial/Industrial)	12'
Minimum Shoulder Width	4' to 8'
Parking Lane	Optional

## LOCAL ROAD SYSTEM

RURAL - Minimum Right of Way Width	50'
Minimum Lane Width	10'
Minimum Shoulder Width	4' to 8'
URBAN - Minimum Right of Way Width	50'
Minimum Lane Width (Residential)	10'
Minimum Lane Width (Commercial/Industrial)	12'
Minimum Shoulder Width	4' to 8'
Parking Lane	Optional



### 3. City Streets

The city streets allow for circulation in the incorporated areas. The circulation pattern in all four incorporated cities is characterized by a rectangular grid with north-south and east-west circulation. The same sub-systems apply to roads under City jurisdictional responsibility as mentioned for County roads.

Most City streets are two-lane roads with provisions for curb parking. There are some one-way streets in Ukiah. Some of the City streets are quite narrow.

The following mileage and surfacing information for City streets was reported in 1981 for calendar year 1980.

<u>Type of Surfacing</u>	<u>Miles</u>				<u>Total Cities</u>
	<u>Ukiah</u>	<u>Fort Bragg</u>	<u>Willits</u>	<u>Point Arena</u>	
Unimproved	--	--	--	--	--
Graded Earth	--	--	--	--	--
Gravel	0.5	0.2	.65	--	1.35
Low-Type Bituminous	2.0	--	.11	3.1	5.21
Asphalt Concrete	42.8	22.3	17.2	--	82.3
Portland Cement Concrete	0.6	--	--	--	.6
	<u>45.9</u>	<u>22.5</u>	<u>17.96</u>	<u>3.1</u>	<u>89.46</u>

### 4. Other Roads

There are approximately 297 miles of Forest Development Roads in the County which are constructed and maintained by the U.S. Forest Service. The Bureau of Land Management maintains approximately 87.0 miles of roads in the County. One mile of road is under the jurisdiction of the Bureau of Indian Affairs and approximately 246 miles of road are maintained as State Park and Forest Roads by the California Department of Parks and Recreation.

There are also many miles of privately-owned and maintained roads in the County which serve industrial and private land access needs and provide for transportation of timber and timber by-products. The private logging and subdivision roads are very important to the economy of the County.

Development of private subdivision roads may increase access and capacity problems in high density areas and increase pressures for dedication of private roads into the county maintained system.

## B. Transit and Paratransit

### 1. Inventory of Existing Services

#### a. Mendocino Transit Authority

Local - The MTA is a permanent agency providing county-wide transportation. Local service is available through Dial-a-ride in Ukiah, Willits, Covelo, and on a limited basis in Point Arena. Also the State Street Jitney service is available in Ukiah.



Inter-City - Inter-city is available for Covelo, Willits, Laytonville, Fort Bragg, Point Arena, Boonville and many small communities in between. More research and information needs to be gathered and analyzed to increase the efficiency of these services.

Inter-County - Inter-county service is available from Point Arena to Santa Rosa five times per week. This is one of the most successful and high demand services. Extending service to interface with Lake County's transit system should be investigated.

Senior Citizen Vans - Five senior citizen organizations in Mendocino County offer transportation to seniors for such things as participation in nutrition programs, medical and shopping trips, etc. This information has been supplied by Caltrans as a result of transit development programs prepared for Ukiah, Fort Bragg, and Willits Senior Citizen Centers. These programs are for UMTA 16 (b)(2) applicants.

- (1) South Coast Senior Citizens in Point Arena provide transportation through volunteer drivers.
- (2) Redwood Coast Seniors, Inc. in Fort Bragg has one van which operates on a combination demand response and fixed schedule basis for various types of trips five days a week. This van is not accessible to wheelchairs. A stationwagon is used to transport the disabled or those requiring special escort service. It is also used for delivering meals to homes and as a back-up vehicle for the van. It is available during the same hours as the van. Some private vehicles with volunteer drivers are also available each day. These drivers are reimbursed for mileage. Outreach workers are used to augment the transportation.
- (3) The Greater Ukiah Senior Citizens Center, Inc. has two vans which operate on a demand response basis around Ukiah five days and four nights a week. One of the vans is accessible to wheelchairs. A third is available as a backup vehicle.
- (4) Anderson Valley Senior Citizen's Center, Inc. has a van which is not accessible to wheelchairs. It operates on a demand response basis weekdays, evenings, and weekends. One day a week the van is used for a round trip to Ukiah. A few private vehicles and volunteer drivers are available on a demand response basis. These volunteers are currently not reimbursed for mileage.
- (5) The Greater Willits Senior Center, Inc. has one van which operates on a demand response basis in the Willits area three days a week. One day a week it makes a round trip to Laytonville and one day a week it makes a round trip to Ukiah.

b. Additional Transit Service

(1) Interregional Service

Greyhound Bus Lines offers service four times daily along State Highway 101. Service is daily along Coastal Route 1.

Greyhound Schedule - Hwy 101

SOUTHBOUND

<u>Willits</u>		<u>Ukiah</u>	
<u>Ar</u>	<u>Lv</u>	<u>Ar</u>	<u>Lv</u>
11:50 am	12:01 pm	12:30 pm	12:40 pm
1:55 pm	2:00 pm	2:30 pm	2:40 pm
6:05 pm	6:10 pm	6:40 pm	6:45 pm
12:25 am	12:25 am	12:55 am	1:00 am
	6:30 am	7:00 am	7:05 am

NORTHBOUND

1:05 pm	1:10 pm	1:40 pm	1:50 pm
4:45 pm	4:50 pm	5:20 pm	5:25 pm
9:05 pm	9:05 pm	9:35 pm	
1:08 am	1:10 am	1:40 am	1:40 am
4:15 am	4:20 am	4:50 am	4:55 am

Fares: Ukiah to Willits: \$2.12 one way

Coastal service on Sundays and holidays.

Ukiah Airporter, Inc. offers two round trips daily between Ukiah and San Francisco Airport seven days a week.

Charter Service is offered to groups seeking transportation for recreational and other travel outside the region by:

B & H Transportation, Fort Bragg  
Mendocino Stage, Fort Bragg  
Mendocino Transit Authority, Ukiah

(2) Regional/Local Service

Mendocino Stage offers local service along the coast between Little River, Mendocino, Caspar, Fort Bragg, and Westport. On-call shuttle service is provided to and from Little River Airport.

B & H Transportation offers inter and intra-county charter service in Mendocino County.

Coast Cab Co., Fort Bragg offers seven day a week demand response service in the Fort Bragg area, 24 hours a day.

Redwood Empire Cab Company offers seven day a week demand response service in the unincorporated areas of the County, 24 hours a day.

California Western Railroad offers tourist-oriented rail passenger service between Willits and Fort Bragg.

## 2. Needs and Deficiencies

In order to determine what changes in existing services were desirable and what new improvements and services should be established, an examination of public transportation needs was undertaken by MTA. This analysis considered previous surveys, census and other documented information. Special attention was given to an analysis of travel patterns and travel activity levels, and input from the public and existing providers.

### a. Summary of Findings

- (1) A permanent, centralized maintenance and administration facility is needed to provide services for all public transit operations.
- (2) The MTA should coordinate and define its procedures and role in conjunction with county and city civil defense emergency measures.
- (3) Terminal space should be allocated for congested areas.
- (4) Park-and-Ride and Park-and-Pool lots need to be developed in all areas where congestion of automobiles in public rights of way warrant parking facilities.
- (5) There should be continued support for coordination among transit users and providers.
- (6) An increase in efficiency of the public transit system based on a unit of service cost to be defined by Mendocino Council of Governments (MCOG).
- (7) Continuously strive to meet the needs of the handicapped in a coordinated manner (all agencies) and to minimize physical barriers.
- (8) Almost no local inter-county service is available from public transit providers. Planned coordination with other county transit providers may be beneficial.

### b. Park-and-Ride Lots - Ridesharing

Because of the increasing cost of gasoline and the ongoing energy crisis, many county residents are looking for alternate types of transportation. Fixed route transit, ride-sharing, carpools and vanpools are the major alternatives available.

## A. Rail

### 1. Existing Services

#### a. Northwestern Pacific Railroad (NWP)

Northwestern Pacific Railroad, a subsidiary of Southern Pacific Railroad, is the only intercounty rail service which serves Mendocino County. Freight service only is offered. NWP's main line extends from Humboldt County through Mendocino County to its connection with Southern Pacific at Schellville, Sonoma County, a distance of about 252 miles. Within Mendocino County there are 100 miles of NWP track, crossing the county from the Trinity County Border at Ramsey to the Sonoma County border at Echo.

The freight shipped from Mendocino County is primarily forest products, although some agricultural products are also shipped. NWP makes four trips per day through Mendocino County, two north and two south. The southbound trains originate in Humboldt County and pick up loaded freight cars as they travel through Mendocino County. The northbound trains, except for some small shipments of cement, chemicals, petroleum products and general merchandise, are empty freight cars being brought back into Mendocino and Humboldt Counties. About 7,000 car loads of freight are shipped from Mendocino County by NWP each year. A freight car loaded in Mendocino County can be distributed by NWP to almost any rail point in the United States or Canada.

Each winter there are some interruptions in rail service. NWP's track closely follows the paths of the Russian and Eel Rivers and the unstable nature of the land usually results in some slides, slipouts or flooding each winter. These interruptions are usually of a minor nature and service is quickly restored.

#### b. California Western Railroad (CWRR)

California Western serves Mendocino County from Fort Bragg to its connection with NWP at Willits, a distance of about 40 miles. Both freight and passenger services are offered.

The freight shipped by CWRR is primarily forest products. CWRR makes one round trip per day from Fort Bragg for the shipment of freight. About 5,000 car loads of freight are shipped annually to the connection with NWP at Willits. Almost all the shipments of freight are bound for destinations outside the County with only some minor shipments of petroleum products seeking destinations within the County.

The passenger service offered by CWRR, known as the "Skunk" trains, is a tourist-oriented service, offering a scenic tour of the Redwood Forest from Fort Bragg to Willits. Intermediate stops are made along the route to deliver groceries, mail,



packages, and passengers. The service is provided by one self-powered diesel railcar and one standard gauge diesel train. In 1973 CWRR carried 104,000 passengers over its route, 95 percent of which were tourist. The number of trips made each day by the "Skunks" varies depending upon the time of year.

## 2. Needs and Deficiencies

The rail system within the county is adequately developed for the transportation of goods and products. A need for passenger service has been expressed by a portion of the public but establishing passenger service inter and intra county is not financially feasible at this time.

## D. Bicycle and Pedestrian

1. The Mendocino County General Bikeway Plan was prepared through the County's regional transportation planning efforts. The Mendocino County Transportation Planning Agency, which is responsible for regional transportation planning in the County, included preparation of the General Bikeway Plan for the County in its 1977/78 Work Program to establish a basis around which local implementation programs could be developed. The following Bikeway Plan is the result of these efforts.

The Bikeway Plan received input from representatives from the Cities, County Public Works Departments and Caltrans. It has been reviewed and approved by both the Technical and Citizens Advisory for the Regional Transportation Planning Agency.

Procedural requirements of Senate Bill 244 states that a General Bikeway Plan is a prerequisite to the Local Bikeways Program. This Mendocino General Bikeway Plan as submitted by the Mendocino County Regional Transportation Planning Agency closely adheres to the policies and guidelines as issued by Caltrans.

Mendocino County is predominantly rural. The coastal portion of the County has Fort Bragg as its main community and is serviced by State Highway 1 and 208, which are part of the Pacific Coast Bicentennial Route. The inland valleys of the County have the communities of Willits and Ukiah and are served by State Highway 101, which are part of the Statewide Bicycle System. State Highways 20 and 128 connect the coast with the inland valleys.

2. Pedestrian facilities are included in consideration of other non-motorized facilities.
3. Hiking and equestrian trails are included in the Recreation Element. Existing and proposed trails, and goals and policies are included in the plan.
4. Adoption of the Circulation Element of the General Plan means that incorporation of the 1979 General Bikeway Plan and the plan shall be implemented as an integral part of the Circulation Element.



COUNTY OF MENDOCINO  
GENERAL BIKEWAY PLAN

- a. Routes selection was achieved by recognizing the various needs of the commuting cyclist, such as, employees, businessmen, shoppers and students. In addition to the commute type trip, the needs of the recreational and touring bicyclists have been recognized. The routes selected are shown on the attached series of maps.
- b. The land use shown on the attached maps are for the three urbanized areas of Fort Bragg, Willits, and Ukiah, all other land use adjacent to the proposed bicycle routes can be considered to be rural, sparsely populated and very scenic.
- c. Transportation interface has been coordinated with the other modes of travel common to Mendocino County. These are the Greyhound Bus Line, the Mendocino Transit Authority (bus service) and the unique rail service called the "Skunk", which offers passenger service between the cities of Willits and Fort Bragg. This rail service offers a scenic and safe way to travel between the two State Routes, 101 and 1.
- d. Planning input has been obtained from the Citizens Advisory Committee, the City of Ukiah Planning Department, the City of Fort Bragg Planning Department, the City of Willits Police Department, the County of Mendocino Planning Department and the Mendocino County Parks and Recreation Department.
- e. The route selection for this Bicycle Plan has been done in close coordination with the Mendocino Regional Transportation Plan, the Ukiah Master Plan and the Caltrans Bicycle Route System.
- f. As stated in Section D of this plan, all of the interested local agencies and the Technical Advisory Committee have suggested input which has been incorporated into this plan.
- g. Facilities which enhance bicycle travel along the planned routes, such as restrooms, drinking water, air for bicycle tires, bicycle repair services and camping facilities have been labeled on the attached maps.
- h. All public facilities such as schools, libraries and public buildings have bicycle racks provided.

E. Air Transportation

1. Existing System (See map)

a. General

There are currently seven airports within Mendocino County which are open to the public on a regular basis. The Boonville, Round Valley, and Mendocino County Airports are owned and operated by the County of Mendocino. The

Ukiah and Ellsfield Airports are owned and operated by the Cities of Ukiah and Willits, respectively. The Fort Bragg and Ocean Ridge Airports are privately owned and operated. In addition, there are several privately owned airports in the County which are not open to the general public on a regular basis.

Not all of the public-use airports are considered regionally significant. The five publicly owned airports--Boonville, Round Valley, Mendocino County, Ellsfield, and Ukiah--form the Regional Airport Network.

All airports within the County are General Aviation Airports (i.e., airports which predominantly serve privately owned aircraft). They allow opportunities for business, recreation, and tourist travel throughout the County and therefore contribute beneficially to the regional economy. Fixed base operators at the airports provide, in varying degrees, unscheduled air taxi service, instruction, fire fighting operations, aircraft maintenance, and commercial services such as aerial crop dusting. No scheduled commercial passenger or air freight service is currently provided.

b. Ground Access and Surface Transportation

Ground access to the airports included in the Regional Airport Network is provided by the County road system. The Ukiah Airport lies adjacent to South State Street and has convenient access to State Highway 101. The Willits Airport has access to an all weather County road. A County road adjoins the Boonville Airport. The access road to the Mendocino County Airport is a 24-foot wide with gravel surfacing (1/4 mile) and seal coat (1/2 mile) provides access from Covelo to the Round Valley Airport.

Surface transportation at the regional airports is limited to motor vehicles, primarily taxis and private automobiles. Ukiah and Ellsfield are the only regional airports conveniently served by taxi.

c. Financial Programs

The National Airport System Plan (NASP) consists of those public, civil, and joint use (military/civil) airport facilities within the United States and its territories considered necessary to provide a system of airports adequate to anticipate and meet the needs of civil aeronautics. Boonville, Round Valley, Mendocino County, Ukiah, and Ellsfield are included in the NASP and are therefore eligible for Federal funding.

The California Airport Aid Program (CAAP) provides financial assistance to public entities for acquisition and development of airports owned and operated by the public entity.

No public monies are involved in the privately owned and operated facilities.

d. Flight Activities Inventory and Forecast (Table 1)

The nature of aviation activity in Mendocino County is not expected to change radically during the next 20 years. Rather, a steady increase in based aircraft and operations, both local and itinerant, is expected. The aircraft mix will remain essentially as it is today - predominantly business jets, large twin engine prop, light twin engine, and single engine aircraft (including rotary wing aircraft).

Recreational usage of the airports is expected to increase. The primary function of the airports is expected to remain today - to serve local aircraft owners and operators and recreation and business-oriented travel.

Air carrier service is expected to become more desirable as the population and economy of the County grow.

2. Issues and Studies

a. Issues

Several issues have been identified which would be considered during the planning and development of a regional airport system. The following is not meant to be an all-inclusive list but an attempt to identify major aviation-oriented concerns as they relate to the Region.

(1) Establishment of an Air Carrier Service

Mendocino County is not currently served by a commercial air carrier. For several years Southwest Airways Company provided scheduled passenger and air freight service at the Little River Airport. Pacific Airlines inaugurated air carrier service at the Ukiah-Airport and operated until 1961. Golden Pacific Airlines, operating at Ukiah was the last air carrier to provide the County with passenger service having ceased service during 1972. None of these operations have been economically successful. Marin Aviation, Inc., currently has an application (Application No. 54604 amended 5/28/74) before the Public Utilities Commission which proposes passenger air carrier service to the north and south with a regular stop at the Ukiah Airport and a flag stop at the currently privately owned, non-public use Fort Bragg Union Lumber Company Airport.

The nearest air carrier airports (i.e., airports which provide scheduled air taxi passenger and/or air freight service) to the north are Murray Field and Arcata in Humboldt County. The nearest to the south is Santa Rosa Air Center in Sonoma County and the nearest to the east are Marysville/Yuba County Airport in Yuba County and Sacramento Metropolitan Airport in Sacramento County.

An air carrier service would be convenient for residents of and visitors to the County. However, unless passenger activity is increased over past levels, a long-term air carrier service in the County seems unlikely for economic reasons. The greatest demand for passenger and/or air freight service would most probably be in the Ukiah area since it is the center of population, economic and governmental activities within the County.

## (2) Network of Public-Use Airports

General aviation airports, such as those in Mendocino County, can generally be expected to serve private aircraft owners and operators who live within a 30 minute driving radius of each airport. In order to serve local aircraft owners, and to provide emergency landing opportunities, a well distributed regional network of public-use airports is essential.

Public-use airports are currently located in the vicinity of each of the four incorporated cities and near several of the state parks within the County. The existing system is convenient for business or recreation-oriented travel within the County. The northwestern part of the County is the only area not conveniently served by an airport located within the County. However, the general aviation airports located at Shelter Cove and Garberville in Southern Humboldt County serve the general aviation need of this area.

## (3) Emergency Service Capability

### Fire Fighting Operations

The Ukiah Airport is the principal airport of all of Lake and Mendocino Counties and the southern portion of Humboldt County and as such has been used as a base for the aerial fire fighting operations of the California Division of Forestry. Usually, two fire fighting aircraft are based at Ukiah during the fire season. Both generally exceed the maximum weight load established for the runway by the Federal Aviation Administration and therefore require special permission to be granted by the Ukiah City Council. The heavy planes now being used are accelerating the deterioration of the runway and taxiway. The Ukiah City Council has granted special permission to the Division of Forestry for their fire fighting operation.

### Search and Rescue Operations

During the 1964 North Coastal Floods, the Ukiah Airport served as a base for rescue operations and accommodated many large military aircraft and helicopters used in that operation. It serves frequently as a base for



search operations for lost aircraft and hunters. It is also used for emergency landing by military aircraft patrolling off the coast and by scheduled airlines flying from San Francisco to North Coastal points.

The outlying airports in the County are tremendous timesavers for the injured or sick who need immediate hospitalization or medical services.

### 3. Airport Classification

#### a. Physical Classification (Table 2)

The following classification system is currently being used by the Federal Aviation Administration, the California Division of Aeronautics and local agencies in classifying airports and is included in the Phase I Report California Master Plan of Aviation. The physical classification for the public-use airports in the County are shown on the "Physical Inventory of Public Use Airports".

AIRPORT CLASSIFICATION SYSTEM

CATEGORY		CORRECTED <sup>1</sup>		STANDARDS
SYM	TYPE	RUNWAY LGTH.		GROSS WT.
		(Min)	(Ft.)	(Max.) (Pounds)
				ACCOMMODATES
IT	International	8000		Over 175,000
				Transport Jets, i.e., B-707, DC-8
DT	Domestic	5700		175,000
				Turbojet up to 175,000 lbs., i.e., B737-200, DC9-10
BT	Basic Transport	4550		60,000
				All G.A. including business jets
GU	General Utility	3200		12,500
				All current G.A. except certain business jets
B2	Basic Utility Stg. 1	2700		12,500
				Approximately 95% of propellor aircraft
LS	Landing Strip	Under 2200		--
				Small propellor aircraft
O	Other	--		--
				STOL, seaplanes, military

Notes: <sup>1</sup> Length corrected for temperatures, elevation and gradient



# PHYSICAL INVENTORY - PUBLIC USE AIRPORTS

Airport Name Associated City/Town Ownership	Classification*	Runway Description Length; Surfacing Strength; Lighting**	Taxiway	Navigation Aids	Facilities (Fuel, Repairs)
<u>Boonville</u> Boonville Public	Basic Utility Stage 1	3240'; Asphalt Concrete 12,000 lbs.; None	No	Wind Indicator (unlighted) Segmented Circle	
<u>Ellsfield</u> Willits Public	Basic Utility State 1	3000'; Asphalt Concrete 12,000 lbs; Available	No	Wind Indicator Segmented Circle	Fuel, Major Repairs 1 Conventional Hangar 10 T-type Hangars Administration Building
<u>Fort Bragg</u> Fort Bragg Private	Landing Strip	1780'; Dirt, Gravel Unknown; None	No	-	-
<u>Mendocino County</u> Little River Public	General Utility	5250'; Asphalt Concrete 100,000 lbs; Available	Yes	Lighted wind Indicator UNICOM Segmented Circle	Fuel 1 Conventional Hangar Administration Building 6 T-type Hangars
<u>Ocean Ridge</u> Gualala Private	Basic Utility State 1	2540'; Asphalt Concrete Unknown; Available on Restricted Basis	No	Wind Indicator UNICOM	Fuel 15 Hangars Office
<u>Round Valley</u> Covelo Public	Basic Utility Stage 1	3670'; Asphalt Concrete 12,000 lbs; Available	No	Wind Indicator (lighted wind tee) UNICOM Segmented Circle	Fuel Helipad 2 Conventional Hangars 5 T-type Hangars Administration Building
<u>Ukiah</u> Ukiah Public	General Utility	5005'; Asphalt Concrete 28,000 lbs; Available	Yes	Wind Indicator, Flight Service Station, Weather Station, VOR Approach System Segmented Circle	Fuel Major Repairs 10 Conventional Hangars 30 T-type Hangars Administration Building

\* As used in Phase One Report California Master Plan of Aviation, DMJM and Associates.

\*\* Lighting-Unless otherwise stated - Available dusk to dawn.

6/1/81

Table 2

b. Functional Classification

Functional Classification is a method developed by Caltrans to classify airports according to their primary function or purpose. This is an "operational" classification as opposed to the previously mentioned "physical" classification. The definition of the various functional classifications of airports are as follows:

Air Carrier Airports (Airports served by regularly scheduled commercial airline service)

A. International

Airports which accommodate a high frequency of interstate and international flights.

B. Primary

Airports which have a substantial percentage of interstate flights predominantly in the short (0-600 miles) and medium (600-1800 miles) range.

C. Secondary

Airports which almost exclusively accommodate short haul (less than 600 miles) and scheduled air taxi or scheduled commuter service.

General Aviation Airports (Airports which predominantly serve the privately owned aircraft)

A. Air Transport Service

Airports which provide unscheduled air taxi and/or air freight service and which have a significant number of based aircraft and itinerant operations. They provide a full range of aircraft related services (i.e., instruction, repair, maintenance, charter, etc.).

B. Community Service

Airports which provide similar services as air transport service but do not have air taxi or air freight service.

C. Local Area Service

Airports which have few, if any, based aircraft and minimal services. Operations are almost exclusively training and/or agricultural oriented.

Special Use

Airports used exclusively for unique commercial or training purposes such as seaplane bases, heliports, blimp bases, parachute drop zones, balloon launching sites, glider ports, etc.

#### 4. Needs and Deficiencies

Total Needs and Deficiencies for the regional airport system have not been determined.

The needs and Deficiencies indicated on the following tables should be considered an absolute minimum as they reflect only planned development within the next three years at the County-owned airports and until 1990 at the Ukiah Airport. No attempt has been made to identify needs and deficiencies at privately owned airports.

#### NEEDS AND DEFICIENCIES

##### Regional Airports

##### Mendocino County

Functional Classification	Airport Name	Deficiency	(in 1980/84 \$)	
			1985	1995
General Aviation				
Air Transport Service	Ukiah	Control Tower Navigation & Landing Aid System Runway Taxiway Lighting Hangar facilities Drainage Terminal facilities	\$759,000	\$1,080,000
Local Area Service	Boonville	Runway Lights Taxi Security Fncg.	\$ 30,000	\$ 30,000
Local Area Service	Round Valley	Runway Surfacing	\$ 20,000	\$ 20,000
	Subtotal-Local Area Service		\$ 50,000	\$ 50,000
	TOTAL REGIONAL AIRPORTS		\$809,000	\$1,130,000

#### F. Harbors

##### 1. Existing System (See map)

##### a. Noyo Harbor

Noyo Harbor is the only all-season harbor along the Mendocino

County coast. It is a shallow draft harbor. It is considered to be one of four main harbors along the Northern California coast between San Francisco and the Oregon border - the others being Bodega Bay in Sonoma County, Humboldt Bay in Humboldt County, and Crescent City Harbor in Del Norte County.

Bodega Bay is the nearest all-season harbor to the south of Noyo Harbor approximately 83 nautical miles. It is a shallow draft harbor (depth less than 20+- feet).

The nearest all-season harbor to the north is Humboldt Bay Harbor, approximately 95 nautical miles north of Noyo Harbor. Humboldt Bay Harbor is a deep draft harbor (depth greater than 20+- feet).

Noyo Harbor is located at the mouth of the Noyo River about 0.7 mile south of the City of Fort Bragg. Noyo River enters the ocean at the head of a cove (Noyo Anchorage). From the mouth a north jetty, 345 feet long, and a south jetty, 234 feet long, extend out into the cove to provide protection for entrance to the river. A dredged channel with widths of 100 to 150 feet and depths of 6 to 12 feet extends from the jetties up the river to about 0.6 mile above the mouth.

The outer harbor, Noyo Anchorage, provides anchorage and fair shelter from northerly or southerly storms. The anchorage is limited to an area about 400 yards long and less than 200 yards wide with depths ranging from 3.5 to 6.5 fathoms.

The inner harbor, Noyo River, provides good protection from all types of weather. However, entrance to and exit from the harbor can at times be difficult. Northerly storms cause breakers between the jetties; westerly seas make entrances hazardous and exit sometimes impossible.

The U.S. Coast Guard leases berth and shore facilities along the south bank of the river for the 83-foot cutter "Point Ledge".

The Noyo Harbor is used predominantly by sport and commercial fishermen. The number of commercial fishing boats operating out of Noyo Harbor varies from 200 to 500 boats throughout the year, approximately the same number as operate out of Humboldt Bay or Crescent City. In the past the harbor was also used for the shipment of lumber.

Noyo Harbor is under the jurisdiction of the Noyo Harbor District which is governed by a Board of Harbor Commissioners. Two of the five commissioners are appointed by the City of Fort Bragg, two by the County Board of Supervisors, and one by mutual consent of the City and the County. They are responsible for policy decisions concerning Noyo Harbor. A Harbormaster is responsible for the day by day operation of the harbor.



The Army Corps of Engineers maintains the jetties, the entrance, the river channels. Silting of the channel is a continuing problem resulting in the need for frequent dredging.

Harbor development is financed through local taxes, Federal and State funds, and revenues from berth rentals.

#### (1) Terminal Facilities

The Noyo Mooring Basin is a publicly owned facility operated by the Harbormaster. The mooring basin is about  $8\frac{1}{2}$  acres in size and is located on the south bank of the river about 0.6 mile above the mouth. The mooring basin has approximately 330 berths which are in good condition and well maintained.

Several privately owned and operated facilities which offer berths and moorings are also located along the river.

The public and private facilities provide a total harbor capacity of approximately 430 berths and 200 moorings.

All facilities necessary for the commercial fisherman or recreational boater are available in the Harbor including fuel, water, ice, general and marine supplies, machine shops, marine railways that can handle boats up to 60 feet in length and  $6\frac{1}{2}$  feet in draft, and launching ramps. The repair facilities are considered to be among the best on the north coast. Noyo Harbor is the only comprehensive marine facility for the recreational boaters along the California coast north of San Francisco.

Several fish processing plants with wharves having depths of 4 to 8 feet are located in the Harbor. The processed fish are shipped from the Harbor by truck.

#### (2) Access to Noyo Harbor

North Harbor Drive, a two-lane road, partially county road and partially a city street, approximately 0.94 mile in length, connects State Highway 1 with the terminal facilities on the north side of the Harbor. South Harbor Drive (0.25 miles) and Basin Street (0.43 miles), also two-lane county roads, provide access from State Highway 20 to the south side of the Harbor.

#### b. Other Harbors

The Mendocino County Coastline also has several small coves which provide some shelter from rough weather. Generally,



shelter is provided only from northerly and northwesterly weather. These coves are used during fishing season by commercial and sport fishermen who have knowledge of local conditions.

The more frequently used coves along the Mendocino Coast are Arena Cove and Albion Cove. These provide mooring facilities which are generally usable only during the summer months.

A fish processing plant is located at Arena Cove. Limited supplies for commercial and sport fishermen are available at the coves.

## 2. Needs and Deficiencies

Needs and deficiencies for the water transportation made along the Mendocino County Coast have not, at the present time, been sufficiently identified to allow quantification. A need has been expressed for additional berthing facilities along the coast for both commercial and recreational vessels. Additional parking facilities and improved access to the smaller coves were also recommended.

All harbors in Mendocino County are within the Coastal Zone. More specific goals, policies and implementation programs are addressed in the Local Coastal Plan.

## G. Natural Gas Pipelines

### 1. Existing System (See map)

The only major pipeline which serves Mendocino County is the Pacific Gas and Electric natural gas transmission line. Gas is transmitted north from the San Francisco Bay Area to Ukiah in an 12-inch line and on to Willits in a 8-inch line. Local service lines distribute the gas to the outer areas.

### 2. Issues, Needs, and Deficiencies

Pacific Gas and Electric has no plans for major extensions of the gas transmission line in Mendocino County. Some local service lines may be constructed to meet future needs.

## H. Electric Distribution Facilities

### 1. Existing System

Electric services for Mendocino County are served by the Pacific Gas and Electric Company. The only P.G.&E. power generation plant within the County is located at Van Arsdale Reservoir near Potter Valley. The County is served by a network of 60,000 to 230,000 volt transmission lines that connect 13 in-county substations. with the Potter Valley powerhouse and other power generation plants throughout the state.

The Georgia Pacific mill in fort Bragg has a generation plant in operation and the Masonite Hardboard plant in Ukiah is considering installation of a power generator.

## 2. Issues, Needs, and Deficiencies

As growth occurs, new substations or power generation plants may be required within the County to serve future needs. Pacific Gas and Electric is currently proposing a hydro-electric generation plant at Lake Pillsbury (Lake County) which would transmit electricity to the Potter Valley powerhouse.

The Land Use and Housing Elements are recommending the development of an Energy Element of the General Plan. If developed, the plan would provide additional information of the potential development of other energy sources. A number of alternative energy systems are currently under study within the County.

## IV. GOALS, POLICIES AND IMPLEMENTATION

### Explanation of Process

The goals, policies and implementation program for the Circulation Element is the 1980 RTP update, in addition to policies on following page.

Long range goals, policies and procedures are incorporated directly into this element.

The paragraph and sentence structures of the RTP differs somewhat from the format of the other five elements currently being updated. The RTP information is being printed exactly as it appears in the 1980 RTP update:

### POLICY ELEMENT

Regional Transportation Goal	III-34
Objectives and Related Policies	
State Highways	III-35
County Roads	III-36
City Streets	III-38
Transit	III-38
Airports	III-40
Harbors	III-41
NonMotorized	III-42
Transportation Planning	III-43
Unresolved Issues	III-44

### ACTION ELEMENT

Long-Range Plan	III-46
Implementation Responsibilities & Procedures	III-49

### ENVIRONMENTAL ASSESSMENT III-54

### SHORT-TERM ACTIONS AND PROGRAMS ARE INCLUDED IN THE APPENDIX

Short-Range Action Plan	Appendix C	III-68
Financial Element	Appendix D	III-74
State and County Road Programs	Appendix E	III-91
Airport Programs	Appendix F	III-104

When MCOG adopts future updates of the RTP they shall refer the information to the Planning Commission and the Board of Supervisors for consideration in updating the Circulation Element of the General Plan. In future updates of the Circulation Element the County will re-work the format of the document to correspond to the other general plan elements.

In addition to the goals, objectives and policies in the RTP the Board of Supervisors adopts the following goals and policies:

#### GOALS

1. Development of a transportation system that is safe, coordinated, balanced, and efficient.
2. Develop transportation systems that reflect the natural, cultural, and economic resources of the County.
3. Provide a system of collector, local and regional corridors to serve intra-community and regional concerns with safe, efficient means for transfer of goods and travel.
4. Initiate and maintain a continuing five year capital improvement program for streets, highways, and bridges.

#### POLICIES

1. Traffic control devices are to be installed to protect and facilitate traffic on the collectors giving it priority over adjoining local streets.
2. Adopt specific plans where necessary to preserve existing and future right of ways.
3. Establish industrial uses near existing major transportation corridors.
4. Lateral roads should be connected to form loops (where topography permits).
5. Development of roads should be considered where they serve a recreational facility.
6. Existing road corridors should be utilized wherever possible in development of higher capacity corridors.
7. Consider provisions of equestrian biking and hiking facilities along county roads and bridges consistent with the equestrian and hiking and bicycle trail plans.
8. All traffic corridor development plans should incorporate landscaping as part of any improvements.
9. Related to Route 101: Inasmuch as Route 101 is important to the local movement of goods, as it is improved it should be located;
  - a. To complement circulation of adjacent cities, communities and employment centers.
  - b. To minimize the breakdown of agricultural and urban land patterns.

10. The County shall encourage and support state legislation that would provide separate funding for public transit systems and streets and roads.
11. Mendocino County supports the re-establishment of passenger services by NWPRR between Arcata and the Bay Area.
12. Air traffic corridors shall be developed and furnished to the FAA for inclusion in pilot's maps of the county. Air traffic should be routed such that it avoids the populated areas.
13. The Transportation/Circulation Element is in the process of revision, and when the revision is completed it will be incorporated into the General Plan as the Transportation/Circulation Element.
14. Encourage federal support of development of the breakwater for Noyo Harbor.
15. Support the widening of existing state, county, and city roads/streets to accommodate non-motorized travel. Special emphasis should be given to routes where shared use creates a significant safety problem.
16. All new public road construction projects shall provide, where possible, adequate easement for construction of future non-motorized travel.
17. Encourage local agencies/businesses to install bicycle parking.
18. No land developments or land divisions allowed by the Land Use Element shall occur until adequate access and road improvements specified in the Circulation Element are constructed or specified as a condition of approval of the development project.
19. Goals and policies in other elements of the General Plan regarding water, waste water and solid waste shall be reviewed and considered during implementation of this element.
20. The trails system developed as part of the Recreation Element shall be incorporated and implemented as part of the Circulation Element.



SECTION I-1-----REGIONAL TRANSPORTATION GOAL

THIS PLAN WILL RECOGNIZE THE NEED OF CONTINUED DEVELOPMENT AND MAINTNENACE OF A BALANCED MULTI-MODAL TRANSPORTATION SYSTEM THAT PROVIDES FOR MOBILITY NEEDS OF COMMERCE, AGRICULTURE, INDUSTRY, PUBLIC TRANSPORTATION, RECREATION AND THE EVERY DAY PERSON MAKING USE OF CITY, COUNTY AND STATE ROADS OF THE REGION.

TO THIS END, IT IS THE STATED GOAL OF THE MENDOCINO COUNTY TRANSPORTATION PLAN TO PROVIDE A SAFE, ENERGY EFFICIENT AND BALANCED MULTI-MODAL TRANSPORTATION SYSTEM THAT IS CONSISTENT WITH ESTABLISHED AND PROJECTED DEMANDS, FINANCIAL CONSTRAINTS, SOCIO-ECONOMIC-ENVIRONMENTAL OBJECTIVES AND APPROPRIATE LAND USE PLANNING OF THE REGION.

THIS GOAL WILL BE IMPLEMENTED ON THE BASIS OF AREA AND REGIONAL PRIORITIES WHICH VIEW THE TRANSPORTATION SYSTEM IN TOTAL AND NOT BY INDIVIDUAL MODES.



SECTION I-2.01-----STATE HIGHWAYS

2.01(A)

OBJECTIVE:

PROVIDE AN ADEQUATE, WELL-MAINTAINED, EFFICIENT AND SAFE NETWORK OF STATE HIGHWAYS THAT FORM THE CENTRAL ELEMENT OF THE REGION'S HIGHWAY, ROAD AND STREET SYSTEMS, AND PROVIDES FOR BOTH THE REGIONAL AND INTER-REGIONAL TRANSPORTATION NEEDS OF THE COUNTY.

2.01(B)

RELATED POLICIES PERTAINING TO OVERALL OBJECTIVE

1. State Highways should provide for mobility needs of commerce, agriculture, industry, and the general public which are consistent with regional priorities and financial constraints.
2. Maintain and rehabilitate the existing State Highway system, and construct operational and safety improvements, as is consistent with financial constraints and established regional priorities.
3. The TPA, acting in support of the County and its incorporated cities, shall designate regional priorities for improvements and rehabilitation of the State Highways of the region.
4. The State Highway System should (when feasible and warranted) minimize the amount of conflict between local, regional and inter-regional traffic while providing for the mobility needs of the region and be coordinated with regional traffic circulations to relieve congestion from local streets and roads.
5. In the maintenance, rehabilitation, or reconstruction of State Highways, consideration shall be given to both motorized and non-motorized modes of transportation.
6. The TPA will actively oppose any administrative action or procedure by Cal Trans that would further remove the regional planning, design and financing process of State Highways from Local Agencies involvement.

7. The TPA will actively oppose any administrative action or procedure by Cal Trans that would have the effect of reducing the State Highway System now serving the region (unless first approved by the Local Agency) or any proposal that would further diminish State Highway Funds to the north.
8. The TPA will annually review the proposed State Transportation Improvement Program, and recommend changes that reflect regional needs and priorities.

## 2.01(C)

### SPECIFIC STATE HIGHWAY IMPROVEMENT PROJECTS SUPPORTED BY TPA

1. Development of State Highway 101 as a multi-lane highway facility thru Mendocino County with particular emphasis and initial priority on that portion from Burke Hill to the Sonoma County line.
2. Development and/or modification of State Highway facilities (in the following areas) to improve local circulation, reduce conflicts with local traffic, relieve local congestion and generally enhance both the safety and efficiency of the System.
  - (a) Willits area-----SH No. 20 intersection and SH No. 101 thru Willits in general.
  - (b) Fort Bragg area--SH No. 20 intersection and SH No. 01 thru Fort Bragg in general.
  - (c) Mendocino area---Intersections with SH No. 01.
  - (d) North Ukiah-Redwood Valley area--Intersection with SH No. 101.
3. Construction of paved turn outs, passing lanes and/or minor realignments along State Highway thru out the region where warranted by traffic conditions and safety requirements.

### SECTION I-2.02-----COUNTY ROADS

## 2.02(A)

### OBJECTIVE

PROVIDE AN ADEQUATE, WELL MAINTAINED, EFFICIENT AND SAFE NETWORK OF COUNTY MAINTAINED ROADS THAT EXTEND INTO THE UNINCORPORATED AREAS OF THE COUNTY FROM THE STATE HIGHWAY SYSTEM, AND PROVIDES FOR BOTH AREA AND REGIONAL SURFACE TRANSPORTATION NEEDS OF THE COUNTY.

2.02(B)

RELATED POLICIES PERTAINING TO OVERALL OBJECTIVE

1. County roads should provide for mobility needs of commerce, agriculture, industry, and the general public consistent with regional priorities and financial constraints.
2. Develop and annually update a five-year program for County roads which is consistent with anticipated revenues and which includes the designation of project priorities.
3. Maintain and rehabilitate the existing County System of roads and bridges consistent with areas needs, regional priorities and financial resources.
4. Replace and/or reconstruct deficient and/or unsafe bridges consistent with individual area demands that are balanced with both regional priorities and financial resources.
5. Improve the existing County System of Roads and Bridges consistent with regional priorities, financial constraints and County's General Plan.
6. Develop long-range traffic circulation plans for and establish multi-modal transportation corridors in-----areas of anticipated development as is consistent with the County's General Plan.
7. Provide, when warranted, financially feasible, and operationally acceptable; biking, hiking, and equestrian facilities along County roads that are consistent with adopted bikeway and recreational trail plans.
8. Require that all roads accepted into the Maintained System be constructed to applicable county standards.
9. Oppose the relinquishment of State Highways to Local Agencies unless the proposed relinquishment is prompted by superseded highway conditions and portion to be relinquished is deemed appropriate for their jurisdiction by Local Agency.
10. Require that all Private Roads proposed to serve developing areas of the region be constructed to applicable standards, consistent with area needs and compatible with the Circulation Element of the General Plan.

SECTION I-2.03-----CITY STREETS

2.03(A)

OBJECTIVE:

PROVIDE AN ADEQUATE, WELL MAINTAINED, EFFICIENT AND SAFE NETWORK OF CITY STREETS THAT EXTEND INTO INCORPORATED AREAS OF THE COUNTY FROM STATE HIGHWAYS AND COUNTY ROADS AND PROVIDE FOR THE MULTI-MODAL SURFACE TRANSPORTATION NEEDS OF THE CITY SO SERVED.

2.03(B)

RELATED POLICIES PERTAINING TO OVERALL OBJECTIVE:

1. City streets should provide for the mobility and surface transportation needs of both local commerce and residential areas served by the City consistent with area priorities, internal as well as external circulation elements and available funding.
2. Develop and annually update a five-year program for City streets which is consistent with anticipated revenues, and which includes the designation of project priorities.
3. Maintain and rehabilitate existing streets and bridges consistent with area needs, established priorities and financial resources.
4. Coordinate the development of new streets and/or the upgrading of existing facilities with the external circulation element of the Region serving the City.
5. Develop long-range traffic circulation plans for and establish multi-modal transportation corridors in---- areas of anticipated development as is consistent with the Circulation Element of adopted General Plans for both internal and external areas of the City.
6. In the maintenance, rehabilitation, or reconstruction of City streets, consideration shall be given to both motorized and non-motorized modes of transportation.

SECTION I-2.04-----PUBLIC TRANSIT

2.04(A)

OBJECTIVE:

PROVIDE LOCAL AND REGIONAL TRANSIT SERVICES THAT EFFICIENTLY MEET THE NEEDS OF ALL SEGMENTS OF THE PUBLIC IN ACCORDANCE WITH THE DEFINITION OF REASONABLENESS AS ADOPTED BY THE TPA AND IS CONSISTENT WITH AVAILABLE FINANCIAL RESOURCES AND THE TRANSPORTATION PRIORITIES OF THE REGION.



2.04(B)

RELATED POLICIES PERTAINING TO OVERALL OBJECTIVE (GENERAL)

1. Public Transit services should be provided for mobility needs of region residents consistent with established need, regional transportation priorities and available funding.
2. Local, regional, and inter-regional Transit Services should be coordinated to avoid duplication of services and provide efficient intra and inter-community transit services.
3. A Public Transit Service should not be established for the purpose of meeting needs that should be met by a School District.
4. Transit services should be made more accessible to persons with physical disabilities as replacement equipment is acquired.
5. Allocate funds for Senior Center and handicapped groups for Transportation Services when this method is determined to be the most efficient and cost effective means of meeting their needs.

2.04(C)

RELATED POLICIES PERTAINING TO OVERALL OBJECTIVE (ADMINISTRATIVE)

1. The TPA will be the administrative body responsible for the overall review and evaluation of publicly funded transit operations in the County---to assure the best possible use of public funds and compliance with requirements of AB 120.
2. The TPA will develop and adopt specific criteria/procedure for evaluation of the effectiveness and/or necessity of transit providers within the region.
3. MTA public transit services to the region shall be based upon a five (5) year comprehensive program that has been approved by the TPA and reviewed annually.
4. The MTA Board of Directors will ensure that no new or additional services are undertaken, that are not otherwise provided for in the approved five year plan----without specific prior approval of the TPA.



5. The MTA Board of Directors will not implement any new or additional service that would be in direct competition with an existing public transportation service (whether public or private) without authorization of the TPA.
6. Upon determination that an established public need is not being reasonably and efficiently met thru existing Public Transportation Services (whether private or public)----TPA may (subject to regional priorities and available funding constraints) take appropriate actions to meet those needs.
7. Increase coordination of local, regional and inter-regional transit services to minimize duplication of services and increase cost-effectiveness.

#### SECTION 1-2.05-----AIRPORTS

##### 2.05(A)

##### OBJECTIVE:

PROVIDE AN ADEQUATE, WELL-MAINTAINED, SAFE AND EFFICIENT SYSTEM OR AVIATION FACILITIES THAT PROVIDE FOR REGIONAL AND INTER-REGIONAL NEEDS OF BOTH COMMERCIAL AND GENERAL AVIATION.

##### 2.05(B)

##### RELATED POLICIES PERTAINING TO OVERALL OBJECTIVE:

1. Consistent with regional priorities and financial constraints----the regional aviation facilities should accommodate the mobility needs of commerce and passenger travel, together with the special needs of agriculture, industry, recreation and emergency services.
2. Maintain and improve existing publicly owned Airports of the region as consistent with established needs and financial constraints.
3. Future development of each airport should be based on an adopted master plan for the facility.
4. Height zoning ordinances should be implemented and appropriate obstacle clearance areas/zones established, for all airports of the region open to public use in general and publicly owned facilities in particular.
5. Provide adequate public transit with improved streets and roads to regional airports based upon established need and financial constraints.

6. All aviation facilities should be environmentally acceptable and where warranted, respective owner/agencies should cooperate to develop adequate noise control measures by virtue of airport regulations and appropriate land use planning of adjacent lands.
7. Appropriate zoning and land use planning should be applied to areas in the vicinity of Airports to assure compatibility between existing and projected use of the Airport and future development of adjacent lands.

SECTION I-2.06-----HARBORS

2.06(A)

OBJECTIVE:

PROVIDE AN ADEQUATE, WELL-MAINTAINED, SAFE AND EFFICIENT SYSTEM OF MARITIME FACILITIES THAT PROVIDE FOR REGIONAL AND INTER-REGIONAL NEEDS OF COMMERCIAL, RECREATION AND EMERGENCY SERVICES MARITIME VESSELS.

2.06(B)

RELATED POLICIES PERTAINING TO OVERALL OBJECTIVE:

1. Consistent with regional priorities and financial constraints, regional maritime facilities should accommodate all warranted needs of the users of these facilities and accommodate the special needs of ancillary support facilities.
2. Maintain and improve existing publicly owned harbor facilities of the region as consistent with established needs and financial constraints.
3. Future development of harbor and other maritime facilities should be based on an adopted master plan for the facility that is consistent with the County's, Cities, and Coastal Plans.
4. Provide adequate public transit and improved streets and roads to regional harbors based upon established need and financial constraints.
5. All maritime facilities should be environmentally acceptable and compatible land use plans should be developed in the vicinity of existing harbors of the region.
6. Support the design and construction of a break-water at Noyo Harbor.

SECTION I-2.07-----NON-MOTORIZED TRAVEL

2.07(A)

OBJECTIVE:

PROVIDE AN ADEQUATE, FUNCTIONAL AND SAFE SYSTEM OF LOCAL TRAILS AND BIKEWAYS COORDINATED ON A LOCAL AND REGIONAL BASIS. SUCH SYSTEM SHOULD BE COORDINATED WITH OTHER TRANSPORTATION MODES TO PROVIDE FOR BOTH AREA AND REGIONAL NON-MOTORIZED TRANSPORTATION NEEDS OF THE COUNTY.

2.07(B)

RELATED POLICIES PERTAINING TO OVERALL OBJECTIVE:

1. Consistent with other regional priorities and financial constraints, the regional system of Trails and Bikeways should accommodate the general mobility needs of both Commuter Bicyclists and other Recreational users.
2. Implementation of projects and development of facilities should be consistent with the General Bikeway Plan and Trails Plan as set forth in the Recreation Element of the General Plan, based upon established need and available funding.
3. Support the widening of existing State, County and City roads/streets to accommodate non-motorized travel when it is found warranted, operationally feasible and funding allows. Special emphasis should be given to routes where shared use creates a significant safety problem
4. All new highway construction projects shall consider facilities for non-motorized travel based upon justification, operational feasibility and funding constraints.
5. Continue to allocate 2% of TDA funds annually for bicycle and pedestrian projects to stimulate development and improvement of non-motorized facilities.
6. Encourage State and Local Agencies to seek out additional sources of funding for needed non-motorized projects.
7. The General Bikeway Plan and Trails Plan should be concurrently updated with Local General Plans.

8. Encourage local agencies/businesses to install bicycle parking when found warranted, environmentally acceptable and consistent with the General Plan.

SECTION I-2.08-----TRANSPORTATION PLANNING

2.08(A)

OBJECTIVE:

DEVELOPMENT OF A CONTINUING, COMPREHENSIVE, BALANCED AND COORDINATED MULTI-MODAL TRANSPORTATION PLAN THAT IS PRAGMATIC; PROVIDES FOR BOTH SHORT AND LONG RANGE TRANSPORTATION AND MOBILITY NEEDS OF THE REGION, AND IS SUPPORTED BY STATE GOVERNMENT, LOCAL AGENCIES AND COUNTY RESIDENTS ALIKE.

2.08(B)

RELATED POLICIES PERTAINING TO OVERALL OBJECTIVE:

1. The Plan will comply with all stipulated requirements, relating to the development of a Regional Transportation Plan, as set forth by applicable State Law and the regions own planning needs.
2. The Plan will always address and otherwise reflect the Regional Transportation Goal as set forth in Section I-1 of this Plan.
3. The Plan should address both existing and the forecast of future funding constraints when establishing regional priorities for the various modes of transportation.
4. The Plan will promote cooperation between the State, Cities, and County to develop solutions and implement projects/programs that will resolve conflicts between local and state highway traffic with special emphasis on the Willits and Fort Bragg areas.
5. The Plan will promote increased utilization of State Highways to improve local traffic circulation in areas served by freeway facilities.
6. The circulation element of all General Plans in the region, will be consistent and coordinated with the Regional Transportation Plan.
7. Maintain and update (as necessary) those elements of the County's General Plan affecting the Regional Transportation Plan including but not limited to the Regional Bikeway and Trails Plans.



8. Develop and maintain data on commerce, recreation, and non-resident transportation requirements of the region.
9. Through studies and the planning process, develop programs to maintain and/or improve the efficient mobility of goods and people.

SECTION I-2.09-----UNRESOLVED ISSUES

2.09 (A) -----HIGHWAYS

1. Development and implementation of realistic solutions to traffic congestion and circulation problems on State Highways and local streets in the Fort Bragg and Willits area.
2. Coordination of land use planning and transportation in general and in the vicinity of the intersection of State Highways 1 and 20 in particular.
3. Specific traffic corridor planning for rapidly developing areas in the vicinity of Ukiah, Willits, and Fort Bragg.
4. Impact and resolution of the impact of recreational oriented traffic on the region's transportation facilities.

2.09 (B) -----COUNTY ROADS

1. Projected expenditures indicated in the Financial element and Appendix A exceed projected revenues by nearly \$15 million during the 1980-85 period.

2.09 (C) -----TRANSIT

1. Coordination of services provided by MTA, Social Services Agencies, Community Service Organizations, Schools and private operators.
2. Development and implementation of a special criteria to evaluate the effectiveness of the region's public transit system.
3. Clarification of State and Federal regulations regarding system accessibility.



2.09(D)-----AIRPORTS

1. Development of applicable Master Plans for various airports of the region together with associated land use planning for areas in their immediate vicinity.

2.09(E)-----PLANNING

1. Functional relationship between the Regional Transportation Plan, Local General Plans and the County's General Plan.

## L O N G - R A N G E      P L A N

At this time in Mendocino County, the long-range plan for transportation in the County is seen to be a financially constrained plan. No major new funding sources are anticipated; the total availability of funds from all sources is expected to increase at a rate less than current inflation. Under these assumptions many needed transportation projects in Mendocino County cannot be financed and the increased emphasis for transportation improvements, in order to make the best use of the limited financial resources, may be placed on maintenance, rehabilitation, and operational improvements to the existing transportation system.

Long-range project-level programming is difficult for rural regions such as Mendocino County. Future directions in the transportation system can, however, be determined through the short-range policies and planned actions of the implementing agencies. The major components of the long-range transportation system which can be identified are discussed below.

### State Highways

The long-range highway program in Mendocino County is primarily a program of maintenance, rehabilitation, operational, and safety improvements. Some new construction is required, however, especially along Route 101. In addition to projects already scheduled in the 1980 STIP, the highest priority construction projects on Route 101 are (1) the southernmost section in the County (between the existing 4-lane section south of Ukiah and the Mendocino/Sonoma County line, including the Hopland by-pass), and (2) the Willits bypass. These projects should be included in the State Transportation Improvement Program, funded with "discretionary" funds if necessary.

Other projects, including improvements between Leggett and Red Mountain Creek will require modifications to the Route 101 corridor; but due to revenue limitations, it is anticipated that funding for these projects will be delayed for several years.

### County Roads

The long-range County Road Program is primarily a program of maintenance, rehabilitation, operational and safety improvements with special emphasis on the replacement of deficient/unsafe bridges.

In addition to maintenance, rehabilitation, and operational improvements, some new transportation corridors may need to be established to coordinate with land use development. There are no currently identified funding sources for new transportation corridors that may be required.

## Transit

Mendocino Transit Authority has been authorized as the agency to meet the transit needs of the County according to the guidelines set forth in the MCOG report on Reasonableness dated July, 1980 (Appendix "D"). Included in this report, is the "Needs Definition" adopted September 1979.

Mendocino Transit Authority is currently working a five year plan which will be completed in 1981.\*\*The five-year plan will include recommended actions relative to system expansion, the need to procure a permanent administration and maintenance facility and a schedule of bus procurement.

## Airports

The long-range plan for publicly owned airports in Mendocino County includes maintenance and improvements. Clear zone acquisitions and height zoning ordinances and designation of appropriate land use plans also hold high priorities to protect the airports from encroaching developments.

## Harbors

Construction of a breakwater at Noyo Harbor is a high priority project to improve seaward access at Noyo Harbor. This project, however, is contingent upon the availability of Federal Funds. Other improvements include routine maintenance and annual dredging of the Harbor.

## Non-Motorized Transportation

The County has a General Bikeway Plan which has been adopted by the Mendocino Council of Governments. The County also has a Equestrian and Hiking Trails Plan which is part of the Recreation Element of the County General Plan. These plans were established as a basis around which local implementation programs could be developed. Additionally, Ukiah, Fort Bragg, and Willits each have had Commuter Bikeway Studies to determine high volume routes used by bicyclists. These studies when adopted by their respective agencies will become implementation programs for commuter bikeways. Bicycle commuter guides have been prepared by Caltrans for the Ukiah, Fort Bragg, and Willits area.

Limited funding is now available from the Regional Transportation Planning Agency for funding non-motorized transportation projects. Two percent (2%) of annual Transportation Development Act funds are set aside for these projects.

*\*\* The MTA five-year plan will be submitted to the Mendocino Council of Governments for inclusion in the Regional Transportation Plan.*

### Non-Motorized Transportation Continued

The County and incorporated cities should each adopt a bikeway plan based on these or other studies which may be undertaken as part of the circulation elements of their respective General Plan.





## IMPLEMENTATION RESPONSIBILITIES AND PROCEDURES

Although the Mendocino County Council of Governments is responsible for the preparation and maintenance of the Mendocino County Regional Transportation Plan, management of the various segments and actual implementation of projects and planned developments is the responsibility of individual public and private agencies in the County.

### H I G H W A Y S

#### State Highways

The California Department of Transportation (Caltrans) is responsible for State highway project development and implementation. The State Transportation Improvement Program (STIP), as outlined below, forms the basis for project selection.

#### State Transportation Improvement Program (STIP)

The Alquist - Ingalls Act (AB 402, 1977), outlines the planning and programming process for State Highways. It requires that a Statewide Five-Year Transportation Improvement Program (STIP) be developed including estimates of available Federal and State revenues, recommended annual expenditures from the State Highway Account by program category, a geographic listing of capital outlay projects, a project priority listing, and any additional information and action necessary to the successful implementation of the adopted State Transportation Improvement Program. The California Transportation Commission (CTC) can only allocate funds for projects which are included in its adopted State Transportation Improvement Program.

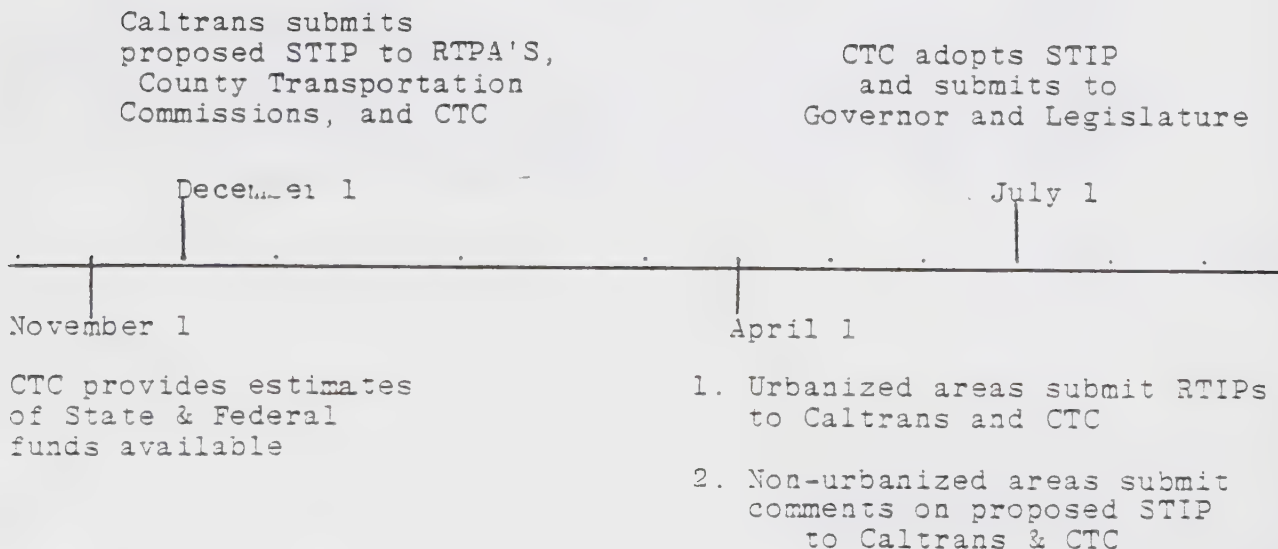
## State Transportation Improvement Program (STIP) Continued

AB 402 defines the process for developing the STIP on an annual basis. The basic steps are:

1. Caltrans shall prepare a proposed STIP consistent with fund estimates provided by the California Transportation Commission. The proposed STIP shall be transmitted to the California Transportation Commission, the Regional Transportation Planning Agencies, and the County Transportation Commissions by December 1 of each year.
2.
  - a. After considering the proposed STIP, the transportation planning agencies and county transportation commissions representing urbanized areas over 50,000 population must prepare Regional Transportation Improvement Programs (RTIPs) for their geographic areas and submit them to the California Transportation Commission and Caltrans by April 1.
  - b. In the rural areas of the State, such as Mendocino County, the transportation planning agencies shall adopt and submit to the California Transportation Commission and Caltrans any comments they may have regarding the proposed STIP by April 1.
3. After reviewing the proposed STIP prepared by Caltrans, RTIPs, regional comments on the proposed STIP, and input from public hearings, the California Transportation Commission shall adopt a STIP and submit it to the Governor and Legislature by July 1 of each year.

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### ANNUAL STIP DEVELOPMENT PROCESS



Under AB 402, needed highway projects in Mendocino County must compete on a District wide basis for relatively scarce funds. The Mendocino Council of Governments urges the CTC and Caltrans when developing the STIP, to consider not only the traditional needs studies and programming methods but such factors as the high volume of recreational travel in Mendocino County from outside the Region (mainly from Los Angeles, San Francisco, and Sacramento), provision of access to and along the Mendocino Coast, and the higher relative priority of safety projects on rural highways in Mendocino County compared with landscaping or noise abatement in the metropolitan areas.

### County Roads

The Mendocino County Department of Public Works is responsible for County Road project development and implementation. Five-year improvement and rehabilitation programs are developed annually by the Department of Public Works and approved by the County Board of Supervisors. Specific projects are then scheduled by the Department of Public Works for design and construction based on funding constraints and staffing capabilities.

### City Streets

The project development and implementation procedure for City street improvements is very similar to that for County roads. The Department of Public Works for each city prepares and submits proposed programs to their respective City Councils for approval and funding.

### Transit

#### Mendocino Transit Authority

The Mendocino Transit Authority (MTA), formed through a Joint Powers Agreement between the County of Mendocino, the Cities of Ukiah, Willits and Point Arena are responsible for operation of the regional bus system and related policy decision making. The operational details of the system can be seen in Appendix B.

The MTA Board of Directors meets monthly to discuss operational and policy issues. A general manager has been hired to coordinate the project and oversee day by day operation of the bus system.

The MTA is the established transit operator and coordinator of all public transit services in the County and shall evaluate applications for public transit funds.

### Ukiah Dial-A-Ride

The Ukiah City Manager is responsible for operation and administration of Ukiah's public dial-a-ride service. He receives staff assistance to manage the service and oversee daily operations. The Ukiah City Council is responsible for policy decisions, fund allocation, and major changes in operation or management of service.

### Private Transit Services

Senior Citizen vans operating in Ukiah, Fort Bragg, Boonville and Willits areas are managed by the Directors of corresponding Senior Centers. Responsibility for major service changes and new project implementation ultimately rests with the Board of Directors of each of these senior citizen's non-profit corporations.

Greyhound Bus Lines, private charter bus companies (B & H Transportation Co.) and the Mendocino Stage are all privately owned and managed transit services. Decisions for changes in service can only be made by company owners and managers but should be in accordance with the public need if these companies are to continue successful operations in Mendocino County.

### Airports

#### Boonville, Round Valley, and Mendocino County (Little River) Airports

The Mendocino County Department of Public Works develops the improvement plans for the County-owned airports. The proposed projects are submitted to the County Board of Supervisors for approval and funding prior to implementation. The Department of Public Works administers the construction contracts and performs routine maintenance.

### Ukiah Airport

Project implementation and planning for Ukiah Airport is a cooperative process involving the City Council, Airport Commission and the City's Director of Public Works. All funding and capital improvements must be approved by the City Council.

The Airport Commission consists of citizens, pilots, and other persons involved in aviation from portions of the County outside of the incorporated area as well as within the City limits. This Commission serves as an advisory board to the City Council.



## Ukiah Airport Continued

The Director of Public Works for the City of Ukiah serves as the management staff responsible for implementing approved projects and planned improvements.

## Ellsfield (Willits Airport)

The airport manager at Ellsfield is responsible for developing improvement plans and maintenance programs at the airport. Proposed projects are submitted to the Willits City Council for approval.

## Harbors

### Noyo Harbor

Noyo Harbor is under the jurisdiction of the Noyo Harbor District which is governed by a Board of Harbor Commissioners. Two of the five commissioners are appointed by the City of Fort Bragg, two by the County Board of Supervisors, and one by mutual consent of the City and the County. They are responsible for decisions concerning Noyo Harbor. A harbor master is responsible for the day by day operation of the harbor.

The Army Corps of Engineers maintains the jetties, entrance, and river channels.





ENVIRONMENTAL RE-EVALUATION  
OF  
1980 MENDOCINO COUNTY  
REGIONAL TRANSPORTATION PLAN

The Environmental Impact Report for the Mendocino County Regional Transportation Plan was prepared in 1975 concurrently with preparation of the 1975 Plan. The 1980 Mendocino County Regional Transportation Plan updates the original Plan, but includes no changes which are significant enough to suggest the need for a new Environmental Impact Report. The Plans are compared below.

HIGHWAYS

The recommended State Highway Program in the 1975 Plan was a financially unconstrained 20 year plan including four lane freeway/expressway development on State Highway 101 through the Region, on SH 20 from its junction with SH 101 easterly to Lake County and SH 1 from Russian Gulch to four miles north of Pudding Creek (approximately 13 miles). Major improvements for two lane expressways/conventional highways were recommended on State Highways #1, #20, #162, #175, and #222. No major improvements were recommended for State Highways #253 or #271. No new transportation corridors were planned on County Roads in the 1975 Plan and major emphasis was placed on improvements to the Federal Aid Secondary System. As funding became available, improvements to the system would be made in accordance with priorities established by the Board of Supervisors and the Department of Public Works. City street improvement recommendations for the four incorporated cities were established on similar guidelines as the County. Priorities for improvements were based on available funding and priorities established by each local city government.

The 1980 Regional Transportation Plan contains a much reduced construction program for State Highway, County Road and City-street development and it is a financially constrained plan.

PUBLIC TRANSPORTATION

The 1975 Plan recommended the implementation of a regional public transportation system as a demonstration project for at least one year. The demonstration project was to determine the actual need or demand for public transportation which could be reasonably met. The demonstration program began operation in April 1976. A Joint Powers Agreement was created between the County and Cities of Ukiah, Fort Bragg, Willits and Point Arena for funding and operational control. Mendocino County was recommended to be the lead agency for control of daily operations.

The demonstration program has substantially increased since 1976 and is now an established transit operator, known as the Mendocino Transit Authority. The MTA has a board of directors which reports monthly to the Mendocino Council of Governments and is responsible for funding and operational control of the MTA. The MTA should not create any major changes to the environment because the system operates on existing highways, roads and streets.

### AIRPORTS

The 1975 Plan recommended minor improvements for the three County owned and maintained airports. No major improvements were scheduled. The 1980 Plan does not recommend any major improvements, but will continue ongoing maintenance and minor improvements. Clear zoning was a recommendation in the 1975 Plan for the Ukiah Airport and this recommendation is presently being implemented. The issue concerning the home base location for borate fire fighting operations was a recommendation that was to be solved. The borate aircraft will continue to operate from the Ukiah Airport and not relocate to another home base location. This is in compliance with the noise element of the Ukiah General Plan.

### NON-MOTORIZED TRANSPORTATION

Recommendations for the development of non-motorized transportation plans were recommended in the 1975 Plan. The Plan also encouraged that 2% of Transportation Development Act funds be designated for non-motorized facilities. Since 1975 the County has developed a General Bikeway Plan, adopted by MCOG and a Hiking and Equestrian Trails Plan has been added to the Recreation Element of the Mendocino County General Plan. MCOG began the allocation of approximately 2% of available TDA funds for non-motorized transportation facilities in 1979.

### HARBORS

The 1975 Plan recommends continued dredging of the Noyo Harbor because silting from upstream is a constant problem. Harbor dredging is still continued by the Army Corps. of Engineers as an ongoing maintenance operation. The 1975 Plan also recommends improvements in berthing and parking facilities at Noyo Harbor and minor improvements have been made. The Plan also recommended a study of boating needs, both recreational and commercial along the Mendocino Coast. A study similar to this recommendation is presently being conducted by the U. S. Coast Guard. The Coast Guard is in the process of developing a long range plan for future services along the north coast, including Mendocino County. This information could be used in future harbor planning.

Essentially the 1980 Mendocino County Regional Transportation Plan reflects a general downscoping of proposed actions to conform to available funding and contains no changes which would be likely to have a significant impact upon the environment.

## State of California

GOVERNOR'S OFFICE

OFFICE OF PLANNING AND RESEARCH

1400 TENTH STREET

SACRAMENTO 95814

(916) 445-1114

MUND G. BROWN JR.  
GOVERNOR

January 8, 1981

TO: NON-URBANIZED REGIONAL TRANSPORTATION PLANNING AGENCIES

FROM: DENNIS CASTRILLO  
LOCAL GOVERNMENT UNIT

RE: USING REGIONAL TRANSPORTATION PLANS AS THE CIRCULATION  
ELEMENT OF A GENERAL PLAN

INTRODUCTION

Planning is costly. In these days of limited governmental revenue, many local governments have been forced to allocate many of their planning dollars to current rather than advance planning. Planning is also a serious business. Every year numerous lawsuits are filed over the legal adequacy of general plans. Caught in this dilemma, it's important that planning agencies squeeze the most out of every planning dollar.

Recently, Glenn County suggested that counties should be able to adopt their Regional Transportation Plans (RTPs) as the circulation element of their general plans. The County maintained that the requirements for both documents were nearly identical and that it was costly to prepare two separate documents that have essentially the same purpose. We've examined the statutes and guidelines for both documents, and we'd like to share our findings and offer advice on this matter.

LEGAL REQUIREMENTS

The legal requirements for the circulation element can be found in Government Code Sections 65300 et seq. Legal requirements for RTPs can be found in Section 65080 et seq. We've selected excerpts from these sections to demonstrate their similarity.

Government Code Section 65302(b) requires the adoption of a circulation element consisting of "the general location and extent of existing and proposed major thoroughfares, transportation routes, terminals, and other local public utilities and facilities, all correlating with the land use element of the plan."



Government Code Section 65081(a) requires each transportation planning agency to "prepare a regional transportation plan and a regional transportation improvement program directed at the achievement of a coordinated and balanced regional transportation system, including but not limited to, mass transportation, highway, railroad, maritime, and aviation facilities and services."

#### DO THE CIRCULATION ELEMENT GUIDELINES AND REGIONAL TRANSPORTATION PLAN GUIDELINES MATCH UP?

It's important that the guidelines match up since courts often use them to determine the adequacy of planning documents.

Our review shows that the RTP Guidelines, adopted by the California Transportation Commission, and the General Plan Guidelines for the circulation element, prepared by OPR, differ slightly. The difference is that the General Plan Guidelines recommends local agencies to include a discussion of pipelines and transmission lines. Other than this minor difference, both guidelines are very similar. Briefly both guidelines share the following similarities:

- Clear statements of goals and policies;
- Descriptions of the programs and actions necessary to implement the plan;
- Regular updates; and,
- Consistency with regional plans.

Chart A shows the other relationships circulation element requirements and the RTP Guidelines share.

#### BECAUSE OF SIMILARITY OF THESE DOCUMENTS, CAN A REGIONAL TRANSPORTATION PLAN BE USED AS A CIRCULATION ELEMENT?

Since both documents are so similar, we believe that the 31 counties designated as "Non-Urbanized Regional Transportation Planning Agencies" can adopt their RTP as the circulation element of their general plan, provided that a discussion of pipelines and transmission lines is included in other elements of the general plan. Another way is to prepare and adopt an addendum that includes this discussion.

#### WHAT'S A "NON-URBANIZED REGIONAL TRANSPORTATION PLANNING AGENCY?"

A non-urbanized regional transportation agency is a county that does not contain a Standard Metropolitan Statistical Area (SMSA) within its boundaries. Of course, counties whose status changes from a non-urbanized regional transportation planning agency to a metropolitan planning agency because of the 1981 Census should continue to prepare and adopt a separate circulation element. A list of the 31 non-urbanized regional transportation agencies is shown as Chart B.



### WHY CAN'T CITIES OR COUNTIES DESIGNATED AS "METROPOLITAN PLANNING AGENCIES" DO THE SAME?

Urban transportation plans prepared on a regional basis, especially multi-county areas, may not provide the level of detail or include enough information to make land use decisions. This same reasoning also applies to cities in non-urbanized areas. RTPs were designed to promote effective regional transportation planning and were not designed to provide the level of guidance needed to make planning decisions on a neighborhood or citywide basis. However, cities and metropolitan counties should use the information contained in the RTP, perhaps even adopt them by reference as part of their own circulation element.

### HOW DOES A "NON-URBANIZED COUNTY" ADOPT ITS REGIONAL TRANSPORTATION PLAN AS ITS CIRCULATION ELEMENT?

A county should first examine its RTP and make sure it satisfies both state law and its own planning needs. OPR will soon release a document that will help local governments evaluate the adequacy of their general plans. We call it PLATO -- Planning Law Analysis and Test Organizer. By using PLATO, you can determine if your RTP meets state planning law. Only an objective review of your RTP can determine if it meets individual planning needs. If a county believes the RTP does not meet State requirements or their own needs, it should prepare an addendum that incorporates the changes it feels are necessary. Counties that anticipate preparing an RTP to use as their circulation element should examine the infrastructure issues contained in Chapter VI of the 1980 General Plan Guidelines and incorporate the relevant issues in their RTPs. Once a document is prepared that is satisfactory to the county, the same steps for adopting a circulation element apply. If the RTP and circulation element are being adopted concurrently, the county should let the State Clearinghouse know this when it sends in the RTP for state review.

### CAN A CIRCULATION ELEMENT BE USED AS A REGIONAL TRANSPORTATION PLAN?

No, a financial element and an EIR are required components of RTPs. Because of the "extra" requirements an RTP must contain, it's highly unlikely that a circulation element could qualify as a RTP. While it's possible to adopt your RTP as your circulation element, the reverse is not true in this instance.

### CEQA COMPLIANCE

Another benefit of using your RTP as the circulation element is that an EIR is always prepared to assess the plan's impact. As long as the RTP is not substantially altered or expanded prior to its adoption as a circulation element, the same EIR can be used.

WHOM CAN YOU CALL FOR ADDITIONAL INFORMATION?

If you have any additional questions, please feel free to call Dennis Castrillo of OPR at (916) 445-1114 or Garland Hagen of Cal Trans at (916) 445-8090.

DC:ky

Attachments

C H A R T     A  
CIRCULATION ELEMENT  
AND  
REGIONAL TRANSPORTATION PLAN REQUIREMENTS

CIRCULATION ELEMENTS	REGIONAL TRANSPORTATION PLANS
1. Must be comprehensive and long-term.	1. Must include pragmatic short- and long-range objectives and policies and must be supportive of and/or complimentary to state and regional comprehensive planning.
2. Must cover all territory within the jurisdiction and any lands outside which relate to its planning in the opinion of the planning agency.	2. Each transportation planning agency must prepare a regional transportation plan for the area within its jurisdiction (see Section 65085.5, Streets and Highway Code).
3. Must address all relevant issues specified in Government Code Section 65302 and any issues specified by other applicable state laws. Section 65302(b) says "A circulation element consisting of the general location and extent of existing and proposed major thoroughfares, transportation routes, terminals, and other local public utilities and facilities all correlated with the land use element of the plan."	3. The Action Element of the RTP Guidelines requires a section for each of the following components detailing priorities and the assignment of implementing responsibility: <ul style="list-style-type: none"> <li>• Highway Section</li> <li>• Mass Transportation Section</li> <li>• Aviation Section</li> <li>• Railroad, Maritime, Bicycle, and Other Sections.</li> </ul>
4. Should present data and analysis, policy, and implementation for each issue.	4. Requires an analysis of inventory data to forecast future population density and characteristics, land use development, and centers of economic and social activity. The Action Element of the RTP is required to describe "programs and actions necessary to carry out policies identified in the Policy Element."
5. Guidelines call for consistency with regional plans.	5. The RTP Guidelines recognize that one of the specific purposes for transportation planning in rural areas is to "develop the circulation element of county and city general plans and coordinate transportation with other elements of the General Plan." The Guidelines also require the RTPs to be supportive of and/or complimentary to state and regional comprehensive planning.
6. May be prepared in the format that best suits the need of the jurisdiction.	6. Each RTP must contain a Policy Element, an Action Element, a Financial Element, and an Environmental Impact Report. The Guidelines, however, only provide the general requirements and direction. The planning process to be followed is detailed in the approved RTP agency work program.
7. Requires extensive citizen participation in preparing element.	7. Requires extensive citizen participation in formulating plans.

C H A R T    B

NON-URBANIZED REGIONAL TRANSPORTATION PLANNING AGENCIES

County

Alpine

Amador

Butte

Calaveras

Colusa

Del Norte

El Dorado

Glenn

Humboldt

Inyo

Kings

Lake

Lassen

Madera

Mariposa

County

Mendocino

Merced

Modoc

Mono

Nevada

Placer

Plumas

San Benito

San Luis Obispo

Shasta

Sierra

Siskiyou

Tehama

Trinity

Tulare

Tuolumne

SEE BELOW

1220 IX B



CLASSIFICATION - MAJOR COLLECTORS GREEN

59-1111

## CLASSIFICATION -

BROWN

11-64

# COUNTY OF MENDOCINO GENERAL PLAN

## CIRCULATION ELEMENT --- ROAD CLASSIFICATION

CLASSIFICATION -

MINOR COLLECTOR

BROWN

STREET OR HIGHWAY	BEGIN AT	END AT
C.R. 404 L.R. Airport Road	S.H. 1 at Little River	C.R. 223
C.R. 408 Little Lake Road	S.H. 1 at Mendocino	C.R. 409
C.R. 414 Simpson Lane	S.H. 1 South of Fort Bragg	C.R. 414B
C.R. 421 Pudding Creek Road	S.H. 1 North of Fort Bragg	C.R. 421A
C.R. 435 Briceland Road	C.R. 431	Humboldt County Line
C.R. 500 Lansing Street	S.H. 1 at Mendocino	S.H. 1 North of Mendocino
C.R. 501A Old State Hwy	S.H. 1 at Gualala	C.R. 502
C.R. 502 Old Stage Road	C.R. 501A	C.R. 122
C.R. 503 Iverson Road	C.R. 122	C.R. 503A
C.R. 503A Ten-Mile C.O. Road	C.R. 503	C.R. 506
C.R. 505 Eureka Hill Road	S.H. 1 at Point Arena	C.R. 506
C.R. 506 Ten-Mile Road	C.R. 503A	C.R. 505
C.R. 601 Birch Street	C.R. 311B	C.R. 603
C.R. 603 Clover Road	C.R. 601	C.R. 604
C.R. 604 Primrose Drive	C.R. 623	C.R. 651
C.R. 608 Daphne Way	C.R. 311	C.R. 623
C.R. 623 Poppy Drive	C.R. 604	Willits City Airport
C.R. 640 Goose Road	C.R. 604	C.R. 641
Hwy 101 (To be Relinquished)	Willits City Limits	S.H. 101 at Outlet Creek
Hwy 101 (To be Relinquished)	S.H. 101 South of Willits	Willits City Limits
Hwy 101 (To be Relinquished)	S.H. 101 South of Hopland	S.H. 101 North of Hopland
S.H. 271 (To be Relinquished)	S.H. 101 at Cummings	Humboldt County Line
C.R. 419 Fort Bragg-Sherwood Rd	Fort Bragg City Limits	C.R. 419A
C.R. 304 East Side Road	C.R. 301	C.R. 308
C.R. 308 Canyon Road	C.R. 306	C.R. 237D
C.R. 248 W.S. Potter Valley Rd	C.R. 240	C.R. 245
C.R. 301 East Hill Road	Willits City Limits	C.R. 304

## CLASSIFICATION -

BROWN

[illegible]



COUNTY OF MENDOCINO GENERAL PLAN  
CIRCULATION ELEMENT --- ROAD CLASSIFICATION  
CLASSIFICATION - LOCAL CONNECTOR LT BLUE

STREET OR HIGHWAY	BEGIN AT	END AT
C.R. 323 Spyrock Road	S.H. 101	Iron Peak Road (Private)
C.R. 327C East Lane	S.H. 162	C.R. 327B
C.R. 237B Hill Road	C.R. 327C	C.R. 327A
C.R. 327A Fairbank Road	S.H. 162	C.R. 327B
C.R. 402 Albion Ridge Road	S.H. 1 at Albion	C.R. 401A
C.R. 311 Sherwood Road	C.R. 623	C.R. 419
C.R. 306 Hearst Willits Road	C.R. 310	C.R. 237D
C.R. 248A Powerhouse Road	C.R. 245	C.R. 247
C.R. 122 Fish Rock Road	S.H. 1	C.R. 502
C.R. 215 Vichy Springs Road	C.R. 215A	Ukiah Landfill intersection with C.R. 215 (at the Cattle Guard)
C.R. 209 South Dora Street	C.R. 210	C.R. 252A
C.R. 252 Oak Knoll Road	C.R. 252A	C.R. 104A
C.R. 252A Oak Court	C.R. 252F	C.R. 252
C.R. 226 Marina Drive	C.R. 227	S.H. 20
C.R. 227B Lake Mendocino Dr.	C.R. 227	East end of C.R. 227B
C.R. 239 Uva Drive	S.H. 101	S.H. 101
C.R. 231 Road A	S.H. 20	C.R. 231A
C.R. 231A Road B	C.R. 231	Black Bart Trail (Private)
C.R. 225A Hensley Creek Road	End of the County Road C.R. 225A	C.R. 104
C.R. 412E Gibney Lane	S.H. 1	C.R. 412C
C.R. 607 Lupine Road	C.R. 604	C.R. 311
C.R. 604 Primrose Drive	C.R. 623	C.R. 607
C.R. 649 Lupin Drive	C.R. 604	C.R. 605
C.R. 605 Lilac Road	C.R. 604	C.R. 603
C.R. 609 Madrone Drive	C.R. 608	C.R. 623
C.R. 603 Clover Road	C.R. 604	C.R. 605



# S H O R T - R A N G E      A C T I O N      P L A N

## State Highways

The basis of the short-range plan for State Highways is the 1980 State Transportation Improvement Program. This is a five year document developed by Caltrans and adopted by the California Transportation Commission to schedule for the expenditures of highway projects.

The highway projects planned by Caltrans during the five-year period 1980/81 - 1984/85 are primarily highway rehabilitation and operational improvements. One new freeway construction project, approximately seven miles north of Ukiah on Route 101 near Forsythe Creek, is scheduled to begin in 1982-83. These types of projects are consistent with the State Facilities Objectives and Related Policies as outlined in the Policy Element.

On Route 1, operational improvements through Fort Bragg should help to remove local traffic flow in the City, also one of the State Facility Objectives. One new truck passing lane project is planned, on Route 20 near the Mendocino and Lake County Line. Several deficient bridges on Route 101 and the Dos Rios Bridge on Route 162 are also scheduled for replacement. Project details are located in Appendix A.

Caltrans also plans to continue its maintenance of the existing State Highway system in Mendocino County and has constructed two new maintenance stations; one in Willits on Route 101 and one in Covelo on Route 162.

Miles of planned improvement projects including overlays are distributed among the various State Highways in Mendocino County as follows:

Route 1	38.7 Project Miles
Route 20	16.8 Project Miles
Route 101	14.9 Project Miles
Route 128	42.5 Project Miles
Route 162	1.7 Project Miles
Route 208	12.5 Project Miles
Route 253	7.9 Project Miles

Additional major projects will be undertaken on these as well as other State Highways in the County as they are determined and funds are available.

## City Streets

Street priorities for the City of Ukiah are planned five (5) years in advance for anticipated improvements. Major projects are considered on a priority basis with available funds. Subdivision and development projects, where improvements are required, are to be installed by the developers as conditions of project approval. Additionally, the City has an ongoing maintenance program. Maintenance of the existing system is given priority over new capital improvements. Projects are coordinated with utility replacements or improvements.

The City of Fort Bragg does have a five-year capital improvement program. In addition to ongoing street maintenance, priority projects will be constructed as funds are available.

Due to the lack of available State and Federal revenues for construction, the City of Willits will primarily conduct ongoing maintenance. Priority is to be given to two North/South corridors through Willits to improve local circulation and to install signalized railroad crossings at San Francisco Avenue and East Valley Streets.

The City of Point Arena must accumulate funds (Gas Tax, SB 325 funds) over several years to have sufficient funds for major operational improvements. However, the City does plan to continue its maintenance program for City Streets.

## County Roads

Road projects planned by the Mendocino County Department of Public Works during the five-year period 1980-81 - 1984-85 include ongoing (seasonal) maintenance, storm damage repairs, rehabilitation, and operational improvements. The road rehabilitation projects include replacement of deficient bridges and approaches, culvert construction, paving and roadway reconstruction. Operational improvements consist of intersection improvements, roadway modifications, traffic signal installation, street light installation, and shoulder widening.

While the reader is referred to Appendix "A" for details in general, the Road Program provides for projects on various roads thru out the County System based on area needs and regional priorities. The projects are (in most cases) isolated road reconstruction and bridge replacements. Major projects are proposed for North and South State Street in Ukiah, Branscomb Road Bridge replacement in the Willits area and Mendocino Pass Road. The Mendocino Pass Road is programmed as a Forest Highway project/funding.

Projected expenditures indicated in the Financial Element and Appendix "A" exceed projected revenues by nearly \$15 million during the 1980-85 period. This disparity can be reconciled through the annual updating of a five-year program for County roads which is consistent with anticipated revenues, and which includes the designation of project priorities.

## Transit

### Mendocino Transit Authority

The MTA will prepare and submit to MCOG a five-year transit plan which is consistent with anticipated revenues, and which includes the designation of service priorities.

By December 31, 1981 the MTA will prepare and submit to MCOG an Action Plan relating to the coordination of social services transportation as required by AB 120.

Transit evaluation criteria will be adopted by MCOG based on recommendations from the Transit Productivity Committee pursuant to Section 99244 of the Public Utilities Code.

## Public Service

The Mendocino Council of Governments, MTA and Caltrans are to continue encouraging people within the region to conserve energy through various programs. The MTA currently is using vans from Van Pool Services, Inc. for small groups to use for commute purposes. Caltrans currently is providing matching services, van pools and park and ride programs.

### Ukiah Dial-A-Ride

The City of Ukiah's Dial-A-Ride service for the general public in the Ukiah urban area is also expected to be continued. This is a shared-ride taxi service utilizing sedans. Cost of the system are paid from passenger revenues and by SB 325 subsidy funds. Administration of the system is by the City of Ukiah Public Works Department. Vehicles are dispatched by radio on call or by appointment. Operation is 6 days a week from 7 AM to 7 PM. An assessment of these hours should be performed to determine whether extended service hours are needed in the Ukiah area.

### Senior Citizen Vans

Five senior citizen organizations in Mendocino County offer the following transportation to seniors for such things as participation in nutrition programs, medical and shopping trips, etc. This information has been supplied by Caltrans as a result of transit development programs prepared for the Ukiah, Fort Bragg, and Willits Senior Citizen Centers. These programs are for UMTA 16 (b)(2) applicants. It is anticipated that these services will be continued.

1. South Coast Senior Citizens in Point Arena provide transportation through volunteer drivers
2. Redwood Coast Seniors, Inc. in Fort Bragg has one van which operates on a combination demand response and fixed schedule basis for various types of trips five days a week. This van is not accessible to wheelchairs. A station wagon is used to transport the disabled or those requiring special escort service. It is also used for delivering meals to homes and as a backup vehicle for the van. It is available during the same hours as the van. Some private vehicles with volunteer drivers are also available each day. These drivers are reimbursed for mileage. Outreach workers are used to augment the transportation.
3. Anderson Valley Senior Citizens Center, Inc. has a van which is not accessible to wheelchairs. It operates on a demand responsive basis weekdays, evenings, and weekends. One day a week the van is used for a round trip to Ukiah and back. A few private vehicles and volunteer drivers are available on a demand responsive basis. These volunteers currently are not reimbursed for mileage.



4. The Greater Ukiah Senior Citizens Center, Inc. has two vans which operate on a demand response basis around Ukiah five days and four nights a week. One of the vans is accessible to wheelchairs. A third van is available as a backup vehicle.
5. The Greater Willits Senior Citizens Center, Inc. has one van which operates on a demand response basis in the Willits area three days a week. One day a week it makes a round trip to Laytonville and one day a week it makes a round trip to Ukiah. It is accessible to wheelchairs. There are also some volunteer drivers with automobiles available.

### Airports

Projects proposed by the Mendocino County Department of Public Works for the three County Airports and actions proposed for the two Municipal Airports in Ukiah and Willits during the five-year period 80-81 - 1984-85 consist of ongoing maintenance and operational improvements. Detailed implementation programs for each airport can be found in Appendix C.

At this time, no new capital improvements are scheduled for Boonville and Covelo County Airports.

The only project scheduled at Mendocino County Airport (Little River) is the installation of tiedowns on an asphalt concrete pad.

The City of Ukiah Airport, having the greatest number of based aircraft and total annual operations of all the existing airports in the County, has the largest capital improvement program. Successive clear zone acquisition is scheduled for each year of the planning period. Construction of one 10-unit "T" hangar and two 5-unit "T" hangars is planned. Taxiway extension, repairs, and improvements are scheduled, as well as runway repairs and reconstruction. Additional projects include installation of lighting on the taxiway and parking apron, repair and reconstruction of the parking apron areas, improvements to the automobile parking areas and repair entrance, an addition to the Administration Building, and storm drain construction.

The proposed five-year capital improvement program for the Ukiah Municipal Airport includes reconstruction of the runway in 1983-84. Because of the critical nature of the existing runway condition, this project should be advanced to 1981-82 if at all possible.

Projects planned for Willits Municipal Airport are surfacing of existing dirt tiedown areas, drain installation, provisions for and installation of a taxiway and Vertical Approach Slope indicator, installation of perimeter fencing, adjacent property acquisition,



and installation of an emergency perimeter road.

### Harbors

Over the next five years, the Noyo Harbor District and the Army Corps of Engineers propose the following actions:

1. Ongoing maintenance and service, including storm damage
2. Annual dredging of the channel
3. Design and Construction of the Noyo breakwater

Dredging of the channel is required annually due to the continual problem of silting. It is performed annually by the Corps of Engineers.

Construction of a breakwater at Noyo Harbor is desirable to improve seaward access to the harbor and to allow the Harbor to serve as harbor of refuge. It is hoped the breakwater can be constructed within the next five years, but in 1976 the estimated cost of the breakwater was \$50 million, and the construction depends on the availability of Federal Funds. The Corps of Engineers would be responsible for design and construction of the breakwater.

In addition to the activities of the Harbor District and the Corps of Engineers, the Mendocino County Transportation Planning Agency, the City of Fort Bragg, the County of Mendocino and Caltrans are concerned with improving circulation and vehicular access to Noyo Harbor. It is also recognized that an open communication process must be maintained with authorities at Noyo Harbor to effectively plan for transportation in the vicinity of the harbor.

FINANCIAL ELEMENTSTATE HIGHWAYSSources of Funds and Allocation Procedures

The principal sources of State highway funds are the State gasoline and diesel fuel tax revenues and Federal aid. Caltrans anticipates \$6.7 billion in revenues statewide over the five year period 1980/81 - 1984/85 for State highway development and related expenditures. Approximately 51% of the anticipated revenues will come from State sources (primarily fuel taxes) and the remaining 49% from Federal aid.

California law requires that State highway construction funds be allocated according to certain geographic funding formulas. It also requires highway funds to be distributed on the basis of need. The basic constraints on State highway funding are:

1. County Groups

California is divided into two County Groups, a northerly group and a southerly group. Forty percent of the money available for highway construction in the State is to be spent in the northerly group of counties and 60% in the southerly group.

2. District Minimums

Within each County group 70% of the funds must be distributed among the State transportation districts in proportion to their construction needs. Needs studies are conducted every four years as required by Section 188.8 of the Streets and Highways Code.

The remaining 30% of the money allocated to each County group must remain in the designated County group but District distribution is discretionary with the CTC. In the past, however, District 01, which includes Del Norte, Lake, Humboldt, Mendocino, and portions of Siskiyou and Trinity Counties has been held near the 70% minimum.

For the time period covered by the 1980 STIP (1980-81 - 1984-85) there are an estimated \$146.7 million available for capital outlay on the State highway system within District 01. These funds are allocated to the District by the California Transportation Commission. The District 01 portion of the 1980 STIP is consistent with these estimates. Anticipated expenditures in an individual County, such as Mendocino, can only be estimated since each year the highway program is reviewed and reallocation may be made depending on competing needs of other Counties, changes in policies or revenue estimates, or revised project priorities.

#### Funding Surplus/Deficit

The 1980 STIP was designed to allocate the available revenues in District 01 given the existing funding sources, levels of funding, and geographic constraints (north/south split and District minimums). As such, the anticipated expenditures are expected to coincide with available revenues, and they would not require additional funds from existing sources or the creation of new sources of funds for State highway construction.

It is the recommendation of the Mendocino Council of Governments that existing allocation formulas not be changed. To eliminate the current District minimums would not only preclude any significant improvement to the present highways but would also seriously jeopardize the capabilities of the State and local governments to even adequately maintain the existing facilities.

ANTICIPATED  
STATE HIGHWAY EXPENDITURES  
IN  
MENDOCINO COUNTY

	1980/81 - 1984/85 ( \$ Millions )	
Capital Outlay <sup>1</sup>	\$	35.9
Maintenance <sup>2</sup>		24.5
Engineering Support <sup>3</sup>		<u>7.1</u>
Total	\$	67.5

<sup>1</sup> Programmed expenditures from the Mendocino County portion of 1980 STIP.

<sup>2</sup> Escalated at 14% per year from 1979-80 actual District 01 Maintenance expenditures in Mendocino County.

<sup>3</sup> Calculated at 23% of capital outlay (excluding R.W.).





COUNTY ROADS

MENDOCINO COUNTY ROAD FUND  
ANTICIPATED REVENUES

<u>SOURCE</u>	<u>REVENUE (\$1,000)</u>	
	<u>1980-81</u>	<u>1980-85</u>
LOCAL SOURCES (Property Tax, Vehicle Fines, SB 325, Timber Yield Tax, Trust Funds, Other)	\$ 2,355 *	\$ 8,605 **
STATE SOURCES (Highway User Tax, Collier-Unruh Funds, Motor Vehicle In Lieu Funds, Storm Damage Reimbursement, State Matching Funds)	2,306 ***	9,595 ****
FEDERAL SOURCES (Revenue Sharing, Forest Reserve Funds, FAS, FABR)	1,494	5,800 *****
	<hr/>	<hr/>
TOTAL	\$ 6,155	\$24,000

FOOT NOTES:

- \* Includes \$807,700 accumulated from prior years to accommodate a specific project or program.
- \*\* Assumes allocation of \$2,233,000 (26% of local source) from SB 325 funds.
- \*\*\* Includes \$169,000 of storm damage reimbursement funds (one time only) and \$272,000 of accumulated or special State matching funds (one time only).
- \*\*\*\* Amount depends on no significant decrease in gasoline sales within California.
- \*\*\*\*\* Assumes \$2,000,000 (35% of federal sources) allocation of Revenue Sharing Funds and \$450,000 (8% of federal sources) allocation (anticipated but uncommitted) of Bridge Rehabilitation and Replacement Funds. Amount shown does not include \$5,753,000 planned for expenditure by the federal government on Mendocino Pass Road during the five year period.



# COUNTY ROADS

## MENDOCINO COUNTY ROAD PROGRAM ANTICIPATED EXPENDITURES

<u>ACTIVITY</u>	<u>EXPENDITURES (\$1,000)</u>	
	<u>1980-81</u>	<u>1980-85</u>
Administration	\$ 260	\$ 1,575
Operational Overhead	70	435
Equipment Replacement	140	1,225
Maintenance	3,110	19,770
Engineering & Right of Way Acquisition	285	1,725
Operational Improvements	895	5,680
Major (Capital) Improvements	1,330	8,450*
<b>TOTAL CURRENT ROAD PROGRAM</b>	<b>\$ 6,090</b>	<b>\$38,860</b>
Expenditure reductions that will be necessary unless unforeseen additional revenues become available:	-----	(\$14,860)
<b>FULLY CONSTRAINED ROAD PROGRAM</b>	<b>\$ 6,090</b>	<b>\$24,000</b>

\*Amount shown does not include \$5,753,000 planned for expenditure by the Federal government on Mendocino Pass Road during the five year period.

### COMMENTS:

1. Expenditure plan is based on maintaining approximately the same level of service as provided for in the 1980-81 Road Budget. The 1980-81 Road Budget is a financially constrained program. The program is financially constrained because there simply are not enough resources available to meet the identified needs.
2. The constrained expenditure plan exceeds anticipated revenues by nearly 15 Million Dollars. A substantial portion of road fund revenue sources have remained at a relative constant (in some cases actually decreasing) dollar amount over the past few years while costs have escalated at an alarming rate.
3. Unless new or expanded sources of revenue are developed the road program will have to be further constrained. Such constraints will be applied through the yearly budget process.
4. Federal and State funding assistance can, in most instances, only be used for specific bridge or road projects on the County select road system. These funds are allocated to the County in annual apportionments and in most instances have to accumulate several years to provide enough funding for bridge and road projects.

5. Local funds are used primarily for planned maintenance on the County road system. Local funds are also used as "match funds" for Federal and State projects.
6. However, all projects in the current 1980/81 road program are needed road and bridge projects. These needs are based on increased traffic volumes, safety hazards, natural road and bridge deterioration and structural deficiency. Many roads and bridges were constructed in Mendocino County for logging purposes and have become established as part of the County road system. These County roads and bridges were never designed or constructed to become permanent facilities. Without increased funding sources many of these needed projects will go unfunded.

## CITY STREETS

### Sources of Funds and Anticipated Revenues

The primary sources of funds for improvements to City Streets in the Region are the State gas tax, Senate Bill 325 funds, and the local General Funds. The Cities of Ukiah & possibly Fort Bragg may also qualify for funds under the Federal-Aid-Urban Program (FAU).

<u>City</u>	<u>Anticipated Revenues</u>	
	<u>1980/81</u>	<u>1980/81 - 84/85</u>
<u>Ukiah</u>		
Local	\$ 659,000	\$ 3,295,000
State	150,000	750,000
Federal	11,000	55,000
Total	\$ 820,000	\$ 4,100,000
<u>Fort Bragg</u>		
Local	\$ 378,500	\$ 1,850,500
State	113,000	500,000
Federal (Not available at this time)		
Total	\$ 491,500	\$ 2,350,500
<u>Willits</u>		
Local	\$ 25,000	\$ 140,000
State	110,000	470,000
Total	\$ 135,000	\$ 610,000
<u>Point Arena</u>		
Local	\$ 10,300	\$ 51,500
State	11,125	57,000
Total	\$ 21,425	\$ 108,500



## Plan Implementation Costs

The cost of implementing the short-term City street improvement programs as discussed in the Action Element of this Plan are shown below.

<u>City</u>	<u>Anticipated Expenditures</u>	
	<u>1980/81</u>	<u>1980/81 - 84/85</u>
<u>Ukiah</u>		
Maintenance	\$ 320,000	\$ 1,600,000
Capital Improvements	<u>500,000</u>	<u>2,500,000</u>
Total	\$ 820,000	\$ 4,100,000
<u>Fort Bragg</u>		
Maintenance	\$ 253,700	\$ 1,200,000
Capital Improvements	<u>237,800</u>	<u>1,150,000</u>
Total	491,500	2,350,000
<u>Willits</u>		
Maintenance	\$ 83,000	\$ 450,000
Capital Improvements	<u>52,000</u>	<u>No Estimate Available</u>
Total	\$ 135,000	\$ 450,000
<u>Point Arena</u>		
Maintenance	\$ 5,200	\$ 26,000
Capital Improvements	<u>12,800</u>	<u>No Estimate Available</u>
Total	\$ 18,000	\$ 26,000

## TRANSIT

### SOURCES OF FUNDS AND REVENUE PROJECTION

#### FEDERAL

##### UMTA - Urban Mass Transit Act

1. Section 18 - This is a three year program which started in 1978. It will take Congressional action to extend this program; however all the other sections have been extended and it is anticipated this section will not be an exception.

79-80	\$26,900	82-83	\$33,000
80-81	35,500	83-84	35,000
81-82	31,200	84-85	37,000

Because of 13-C Labor Provision requirements, MCOG doesn't anticipate using these funds. Additionally, the administrative process involved in procuring these funds would be substantial.

2. Section 16 b (2) No allotment per year. Case-by-case allocations are made specifically for capital expenditures for non-profit organizations providing transit for elderly and handicapped.

Redwood Coast Senior Center and Ukiah Senior Center have been approved and other agencies may be approved in the future.

#### STATE

STAF - State Transit Assistance Fund (Source SB 620 from the Transportation Development Act (TDA). This is an appropriation by the Legislature for three years. After 3 years unencumbered funds revert back to the state general fund.

##### a. County Apportionment

79-80	\$60,290	
80-81	86,870	
81-82	80,000	Preliminary Estimate

##### b. State - Discretionary Funds

79-80	
80-81	MTA has applied for \$700,000 to the State
81-82	Not established

## LOCAL

LTF - Local Transportation Fund (SB 325). Public transportation is funded from TDA allocations which come from 1/4 of one percent of sales tax revenues for the County. The following allocations are total funds to the County including allotments to the County and cities for streets and roads.

79-80	\$959,381	82-83	\$1,000,000
80-81	\$960,000	83-84	\$1,000,000
81-82	\$960,000	84-85	\$1,000,000

In the past, Senior Citizen organizations have received some funds from the General Funds used for matching operating costs (source: City and County tax fund).

Also, revenue sharing (source Federal government) has been used in the past for Senior Citizen transit.

MENDOCINO TRANSIT AUTHORITY

(Not including Ukiah Dial-A-Ride or Senior Centers)

PROJECTED 1980-81 REVENUES

Fares, Charters & Other Revenue from Operations \$ 155,000

Transportation Development Action (TDA Funds)

a. Local Transportation Fund (SB 325) \$ 537,602

b. State Transit Assistance (SB 620) \$ 131,998

Other Revenue (including interest) \$ 23,500

TOTAL REVENUES \$ 851,100

PROJECTED 1980-81 EXPENDITURES

Administration \$ 119,000

Operations & Maintenance \$ 491,600

Capital Expense \$ 240,500

TOTAL EXPENDITURES \$ 851,100

A five-year Financial Plan will be developed in conjunction with the development of the five-year Transit Plan that is presently underway.





## AIRPORTS

### Sources of Funds

The primary airport funding programs are the Airport Development Aid Program (ADAP) and the California Aid to Airports Program (CAAP). Funds from these sources are supplemented by local County and City funds.

The Airport Development Aid Program is a Federal program administered by the Federal Aviation Administration to provide funds for improving the operational characteristics of publicly-owned airports. It is a grant program with approximately \$310 million available annually in the United States. In California the fund matching ratio is approximately 80% Federal - 20% Local.

The California Aid to Airports Program provides State funds for capital improvements to publicly-owned airports. The source of the funds is a tax on aviation gas used by general aviation aircraft in California. An annual grant of \$5,000 is made to each airport which meets the eligibility requirements, (such as height zoning ordinances). Supplementary funds are available but are discretionary based on individual needs. The supplementary funds require 10-50% local matching funds, depending on an annual determination of matching requirements.

## Plan Implementation Costs

The costs associated with implementing the short-term action plan for airports in Mendocino County is shown below.

### COUNTY AIRPORTS

<u>Activity</u>	<u>1980-81</u>	<u>Cost</u>	
		<u>1980-81 -</u>	<u>1984-85</u>
Maintenance	\$ 5,142	\$	31,392 *
Capital Improvements	26,300		66,300
Engineering & Design	3,850		23,850
Transportation Planning	<u>1,500</u>		<u>3,500</u>
TOTAL	\$ 36,792	\$	125,042

### MUNICIPAL AIRPORTS

Maintenance	\$ 20,500	\$	125,155 *
Capital Improvements	735,000		4,414,700
Engineering & Design	5,000		25,000
Transportation Planning	<u>1,000</u>		<u>3,000</u>
TOTAL	\$ 761,500	\$	4,567,855

\* Escalated at 10% per year.

## HARBORS

### Sources of Funds

Harbor development is financed through local taxes, Federal and State funds, and revenues from berth rentals. Except when funds from special State or Federal programs (e.g. State Disaster Funds, Army Corps of Engineers) are available, revenue from operations, primarily berthing charges, provide 90% of the funds. The remaining 10% is obtained from local property taxes. In the past, revenues have been adequate for covering normal operations.

### Plan Implementation Costs

<u>Activity</u>	<u>NOYO HARBOR</u>	
	<u>1980/81</u>	<u>Cost (\$) 1980/81 - 1984/85**</u>
Maintenance	30,000*	Can not be estimated
Storm Damage	-0-	Can not be estimated
Dredging	201,820	Can not be estimated
Maritime Regional Transportation Planning	500	Can not be estimated
Engineering & Design	15,910	Can not be estimated

As stated in the Action Element, construction of a breakwater at Noyo Harbor (estimated in 1976 to cost \$50 million), is desirable to improve seaward access to the Harbor. However, construction of the breakwater is contingent upon the availability of Federal funding. It is hoped that funds will be available and the breakwater constructed within the next five years.

\* 1978/79 figure used because 1980/81 figures not made available by District at time of printing.

\*\* 1980/81 - 1984/85 projections can not be estimated because figures not made available by District at time of printing.



## NON-MOTORIZED TRANSPORTATION

### Source of Funds

There are quite a few State and Federal funding programs for financing the development of bicycle, pedestrian and equestrian facilities. However, there is a great deal of competition for these funds.

The majority of transportation related funding programs place highest, or exclusive priority on commuter bicycle projects. Recreation-related funding programs often include provisions for financing all types of non-motorized transportation projects, including hiking and equestrian trails, as well as bicycle facilities.

Funding programs are listed below.

### Transportation-Related

#### 1. Bicycle Lane Account (S&H Code 2383 and 2106, SB 244)

Three hundred sixty thousand dollars per year (\$360,000) are available, from the State Bicycle Lane Account for Statewide allocation to cities and counties, for bikeways and related facilities on a 90/10 funding basis. Projects are eligible for these funds if they are planned to approximately parallel state, county, or city roadways, where the separation of bicycle traffic from motor vehicle traffic will increase the traffic capacity or safety of the roadway.

#### 2. Non-Motorized Transportation in Conjunction with State Highways (S&H Code 157.4)

At least \$360,000 per year is set aside for the construction of non-motorized transportation facilities to be used in conjunction with the state highway system. Presently the CTC has been programming just two million dollars per year for bicycle projects. This includes facilities for use by pedestrians, bicyclists, or equestrians. The fund allocation process is a part of the overall State Transportation Improvement Program (STIP). Competition for these non-motorized funds would, therefore, involve the same factors as State Highway project funding.



Recent changes in legislative attitudes may allow the extension of funding eligibility to projects other than those on or near existing roadways. Construction of non-recreational commuter bikeways, safety improvements to existing bikeways, and provisions of bicycle parking facilities could be eligible for future funding.

### 3. Transportation Development Act Provisions (SB 325) for Pedestrian and Bicycle Facilities.

Two percent of the money remaining in this fund, after allocations for transportation planning and SB 325 administrative expenses are deducted, shall be made available to counties and cities for facilities to be used exclusively by pedestrians and bicyclists. This is unless the TPA determines that these funds could be better used for the support of any other public transportation projects eligible for SB 325 funds. An estimated \$3 million is available annually, from this fund, for non-motorized facilities in the State. In Mendocino County \$21,120 was available for 80-81.

### 4. Traffic Safety

Approximately eight million dollars annually are made available by the U.S. Department of Transportation through the California Office of Traffic Safety for funding projects related to traffic safety. Projects that emphasize bicycle safety, including preliminary engineering studies, actual design, construction, and maintenance of bikeway projects are eligible.

### 5. State and Community Highway Safety

Funds are available through the Federal Highway Administration to finance project which would reduce traffic accidents, deaths, injuries and property damage. Pedestrian and bicycle safety projects are eligible.

## Recreation Related

### 1. Federal Land and Water Conservation Fund

This program is administered through the Bureau of Outdoor Recreation and California State Department of Parks and Recreation. At least \$300 million is available each year for 50% reimbursement of funds spent by local agencies to develop recreation areas and facilities. This program gives priority to multi-use recreational area development. Recreational bicycle trails could be eligible.

## 2. Recreation Facility Loans

Funds are available through the Farmers Home Administration to assist eligible farm or ranch owners, through extension of credit, in conversion of all or portions of privately owned farms to income-producing recreational enterprises. Development of horse-back riding stables and nature trails are eligible projects.

## 3. Investigation, Planning and Development of Water Resources

This is an Army Corps. of Engineers program providing guidance in the development of outdoor recreation facilities. The Corps. of Engineers designs, administers, constructs, and funds 50% of project costs. Local agencies agree to maintain the facility and fund the remaining 50%.

### Other Programs:

Some grant programs with intentions other than the specific development of transportation or recreational facilities could potentially be used to construct non-motorized transportation facilities. Examples are Economic Development - Public Works Impact project funds (Economic Development Administration), Revenue Sharing Funds (U. S. Treasury Department), and Community Development Block Grants (Housing and Urban Development).



## NARRATIVE SUMMARY OF STATE HIGHWAY IMPLEMENTATION PROGRAM

The State highway projects programmed in the 1980 STIP are primarily rehabilitation and operational improvements. Only one major new freeway construction project is programmed in Mendocino County, i.e. purchase of right of way for Stage 1 of a new four-lane freeway project approximately seven miles north of Ukiah near Forsythe Creek is scheduled to begin in 1982-83. There will also be several curve correction and resurfacing projects on Route 101. On Route 1, a continuous left-turn lane will be constructed through Fort Bragg, and there will be some resurfacing, curve correction, and shoulder widening for bicycles. A new truck-passing lane is planned on Route 20 at the Lake County line. Routes 208 and 222 will be resurfaced. Several deficient bridges in the County will be replaced on Routes 101 and 162, and there will be minor improvements on highways throughout the County. Project details are shown on the State Highway "1980 State Transportation Improvement Program Summary".

STATUS OF STATE HIGHWAY PROJECTS  
INCLUDED IN  
1978 MENDOCINO COUNTY REGIONAL TRANSPORTATION PLAN

<u>Route</u>	<u>Locations</u>	<u>Post Mile Limits</u>	<u>Existing* Facility</u>	<u>Proposed Improvement</u>	<u>Project Status</u>
1	Sonoma County Line to 1.2 miles south of Hare Creek	0.0/5.6	2C	Resurfacing	Completed
	North Harbor Drive to Manzanita Street in Fort Bragg	60.4/62.1	4C	Construction of continuous left-turn lane	Rescheduled in 1980 STIP
20	Redwood Valley Under- crossing to 1.3 miles east	33.8/35.1	2E	Truck passing lane construction	Completed
101	Squaw Rock Slide Bridge about 4.7 miles north of Sonoma County Line	4.5/5.1	2C	Bridge replacement	Completed
	0.2 mile north of Route 20 to 4.3 miles north of Forsythe Cr.	30.8/36.1	2E	Construction of 4-lane freeway (two stages)	Rescheduled in 1980 STIP
	Willits Maintenance Station	47.2	--	Building of new Maintenance Station	Under Construc- tion
	0.4 mile south to 0.2 mile north of Outlet Creek Bridge	50.2/50.8	2C	Bridge replacement (and approaches)	Completed
	From Outlet Creek Br. to 1.5 miles north	50.7/52.1	2C	Truck passing lane construction	Completed



<u>Route</u>	<u>Locations</u>	<u>Post Mile Limits</u>	<u>Existing* Facility</u>	<u>Proposed Improvement</u>	<u>Project Status</u>
101	0.9 mile south to 0.6 mile north of Ten Mile Bridge near Laytonville	65.6/67.1	2C	Shoulder modification	Completed
	6.6 miles to 3.7 miles south of Rattlesnake Creek Bridge	74.8/77.7	2C	Truck passing lane construction	Completed
	0.3 mile north Rock Creek to Bridge Creek	94.0/94.6	2C	Truck passing lane construction	Completed
	4.9 to 5.4 miles north of Route 208 Bridges Creek	97.2/97.7	2C	Bridge replacement	Under construction
	Sidehill Viaduct about 6 miles north of Leggett	97.6/97.8	2C	Bridge replacement	Rescoped Rescheduled in 1980 STIP
162	Mld Fork Eel River Br.	15.0/15.3	2C	Bridge replacement	Rescheduled in 1980 STIP
	Covelo Maintenance Station	20.1	--	Building of new Maintenance Station	Completed

\* Number indicates the number of lanes; "C" indicates conventional roadway; "E" indicates expressway.

## 1980 STATE TRANSPORTATION IMPROVEMENT PROGRAM SUMMARY

FOR

## STATE HIGHWAYS IN MENDOCINO COUNTY

<u>Route</u>	<u>Locations</u>	<u>Post Mile Limits</u>	<u>Existing Facility</u>	<u>Proposed Improvement</u>	<u>Cost (\$1,000's)</u>	<u>Year Planned</u>
1	0.5 to 1.5 miles north of Mallo Pass Creek	R26.5/27.5	2C	Shoulder widening for bicycles	\$ 130	81-82
	2.8 to 3.4 miles north of Mallo Pass Creek	28.3/28.9	2C	Shoulder widening for bicycles	150	82-83
	Elk to 0.2 miles south of Navarro Bluff Road	34.8/38.7	2C	Resurfacing	176	80-81
	Noyo River Bridge to Pudding Creek Bridge	60.4/62.1	2C	Continuous left-turn lane	1,920	82-83
	0.5 mile south of Mill Creek Bridge to Cleone Beach Road	64.3/65.0	2C	Curve correction and widening	900	84-85
	Cleone to Westport	65.7/77.7	2C	Shoulder widening for bicycles	100	80-81
	0.2 mile north of Ten Mile River to Rockport	69.9/87.8	2C	Resurfacing	480	81-82
20	4.3 miles east of Route 1 to James Creek	4.3/20.0	2C	Resurfacing	2,020	83-84

<u>Route</u>	<u>Locations</u>	<u>Post Mile Limits</u>	<u>Existing Facility</u>	<u>Proposed Improvement</u>	<u>Cost (\$1,000's)</u>	<u>Year Planned</u>
20	1.1 miles west to 0.8 mile east of Lake County Line (Men. Co. portion)	43.0/44.1	2C	East and westbound Truck passing lanes	\$ 1,211	82-83
101	0.2 mile north of Route 20 to 4.3 miles north of Forsythe - Stage 1	30.8/36.1	2E	Construction of 4-lane freeway - stage 1, Grade & Structures	4,350 (R/W only)	82-83 - 84-85
	Willits Maintenance Station	47.2	--	Construct maintenance station	417	Current Constructio
	Rattlesnake Summit to 0.1 mile south of Rattlesnake Creek Bridge #10-27	77.7/81.3	2C	Resurfacing	600	82-83
	Rattlesnake Creek Br. #10-29 to 0.5 mile south of Marion Lane Bridge	R84.0/R88.3	2C	Resurfacing	550	80-81
	5.1 to 5.3 miles north of Route 208	97.4/97.6	2C	Replace Bridge	599	Current Constructio
	Sidehill Viaduct #10-34 about 6 miles north of Leggett	97.5/98.3	2C	Bridge replacement by realignment	3,860	80-81
	Piercy separation to 0.7 mile north	R101.2/R101.9	2C	Resurfacing	200	82-83

<u>Route</u>	<u>Locations</u>	<u>Post Mile Limits</u>	<u>Existing Facility</u>	<u>Proposed Improvement</u>	<u>Cost (\$1,000's)</u>	<u>Year Planned</u>
128	Route 1 to 0.1 mile west of Flynn Creek	0.0/11.5	2C	Resurfacing	\$ 1,640	84-85
	Mill Creek Bridge to 0.7 mile west of Indian Creek	17.9/22.6	2C	Resurfacing	570	82-83
	0.3 mile west of the 253 junction to the Sonoma County Line	29.3/50.9	2C	Resurfacing	2,490	84-85
	0.2 mile to 2.2 miles east of Dry Creek	43.7/45.7	2C	Curve correction and widening	1,100	82-83
	3.3 miles east of Dry Creek to 0.5 mile east of Mountain House Road	46.8/48.9	2C	Curve correction and widening	1,230	81-82
	0.5 mile east of Mountain House Road to 1.4 miles west of Sonoma County Line	48.9/49.5	2C	Curve correction and widening	690	81-82
162	Mid Fork Eel River Bridge #10-252	15.0/15.3	--	Bridge Replacement	3,300	82-83
	Grist Creek Bridge #10-253	27.9/28.7	2C	Bridge Replacement	330	81-82
	Town Creek Bridge #10-94	28.4/29.0	2C	Bridge Replacement	440	80-81

<u>Route</u>	<u>Locations</u>	<u>Post Mile Limits</u>	<u>Existing Facility</u>	<u>Proposed Improvement</u>	<u>Cost (\$1,000's)</u>	<u>Year Planned</u>
208	2.2 miles east of Route 1 to Route 101	2.2/T14.7	2C	Resurfacing	\$ 495	81-82
253	6.2 miles east of Route 128 to 0.1 mile west of Slide Creek Bridge	6.2/14.1	2C	Resurfacing	1,130	84-85
Var.	Various locations within Mendocino County			Minor and miscellaneous projects	4,851	Con- tinuo throu 1985
					<u>\$35,929</u>	



COUNTY ROADS  
PLANNING PROGRAM SUMMARY

NO.	COUNTY ROAD	LOCATION	P.M.	IMPROVEMENT	COST \$1,000	YEAR PLANNED
1	East Side Road, CR 304	Berry Creek	3.00	Reconstruct bridge across Berry Creek with approaches thereto.	300	80-81-82
2	Uva Drive, CR 239	Forsythe Creek	1.24	Reconstruct bridge across Forsythe Creek and approaches thereto.	300	80-81
3	East Lane	Mill Creek	1.9	Add stringers to existing floor system of bridge.	5.1	80-81
4	Laytonville-Dos Rios Road, CR 322	Hall Creek	2.68	Bridge & Deck rehabilitation of structure.	13.4	80-81
5	Laytonville-Dos Rios Rd. CR 322	Black Rock Creek	3.82	Bridge & Deck Rehabilitation of structure.	13.4	80-81
6	Sherwood Road, CR 311	Sherwood Creek	10.11	Reconstruction bent foundations as required to support the bridge.	12.55	80-81
7	Reynolds Highway, CR 310	Barney Skow Bridge	4.87	Clean and paint existing Bailey Bridge across Outlet Creek.	10.2	80-81
8	Talmage Court, CR 209F	Mill Creek		Reconstruct bridge across Mill Creek & approaches thereto.	51.5	80-81
9	West Side Potter Valley Road, CR 248	White Creek	0.20	Widen existing concrete structure across White Creek.	28	80-81
10	Henry Station Road, CR 107C	R&R Crossing	0.20	Reconstruct roadway to accommodate automatic railroad crossing protec.	100	80-81

NO.	ROAD	LOCATION	EST.	IMPROVEMENT	EST. COST	REMARKS
11	Various Select System Roads	Various locations in County		AC overlay	379	80-81
12	Various Minor System Roads	Various locations in County		AC overlay	439.930	80-81
13	Various County Roads	Various locations in County		MAINTENANCE	76.4	80-81
14	West Road, CR 237		1.20 to 2.20	Complete 2nd stage of reconstruction	153	81-82
15	West Road, CR 237		0.0 to 0.40	Complete 2nd stage of reconstruction	54	81-82
16	Mill Creek Road, CR 203		0.65 to 1.20	Reconstruct with minor realignment, drainage base & seal coat surfacing.	275	81-82
17	Canyon Road, CR 308	Berry Creek	2.10	Reconstruct bridge across Berry Creek with approaches thereto.	360	81-82
18	Airport Road, CR 337	Town Creek	1.10	Replace existing Bailey Bridge with steel truss.	70	81-82
19	North State Street, CR 104	Forks	1.58	Reconstruct roadway w/ signalization & intersection improvements.	837	81-82
20	West Road, CR 237		1.20	Complete 2nd stage reconstruction.	153	81-82
21	Viche Springs Road,	Russian River	0.50	Reconstruct bridge across Russian River & approaches thereto.	1205	81-82
22	East Side Potter Valley CR 240	No Name Creek	6.2	Minor realignment & reconstruction of box culvert for No Name Creek with approaches thereto.	114	81-82

NO.	COUNTY ROAD	LOCATION	P.M.	IMPROVEMENT	ESTIMATED COST \$1,000	PLANNED
23	Mendocino Pass Road, CR 338	Williams Creek	4.3	Reconstruct bridge across Williams Creek & approaches thereto.	790	81-82
24	Mendocino Pass Road, CR 338	Eel River	7.2	Reconstruct bridge across Eel River and approaches thereto.	1563	81-82
25	Branscomb Road, CR 429	Redwood Creek	8.9	Reconstruct bridge across Redwood Creek with road construction & approaches thereto.	670	81-82
26	South State Street, CR 104A	From Oak Knoll		Widen for continuous left turn lanes & A.C. overlay from Oak Knoll to Talmage Road.	430	82-83
27	Mendocino Pass Road, CR 338		2.90 to 4.20	Realign & reconstruct with drainage, base & AC paving.	1400	82-83
28	Mendocino Pass Road, CR 338		0.00- 2.90, 4.5- 5.10, 6.3- 3.7	Realign & reconstruct with " " " " " "	1110	82-83
29	Mountain House Road, CR 111	Cummiskey Creek	2.00- 2.25	Construct new bridge across Cummiskey Creek with approaches thereto.	300	83-84
30	Mendocino Pass Road, CR 338		5.10- 6.30	Realign and reconstruct w/ drainage, base & AC paving.	1400	82-83
31	East Side Road, CR 201	Mill Creek	14.85	Widen existing bridge across Mill Creek to accommodate sidewalk on downstream side.	40	83-84

32	North State Street, CR 104	Masonite Overpass	0.77	Widen existing structure & reconstruct Orr Springs road intersection.	250	85-86
33	North State Street, CR 104	Ackerman Creek	1.05	Widen existing structure across Ackerman Creek & approaches thereto.	300	86-87
34	East Side Potter Valley Road, CR 240	East Fork-Russian River	0.00- 0.04	Reconstruct bridge & approaches thereto across East Fork- Russian River.	910 *	***
35	School Way, CR 236	Russian River	1.34	Place rock rap protec- tion around bent footings of bridge across Russian River for scour & flood protection.	6.4	***
36	Lake Mendocino Drive, CR 227B	Russian River	0.87	Reconstruct or rehabili- tate approach spans for bridge across Russian River.	**	***
37	East Side Potter Road, CR 240	Burright Creek	3.75	Widen existing concrete structure across Burright Creek.	**	***
38	East Side Potter Road, CR 240	No Name Creek	2.83,	Widen existing concrete structures across No Name Creek.	**	***
39	Eureka Hill Road, CR 505	Garcia River	4.9	Place rock rap around wes- terly abutment for scour & flood protection of Garcia River Bridge.	18.5	***
40	Mountain View Road, CR 510	Rancheria Creek	20.5	Reconstruct bridge across Rancheria Creek w/approaches thereto.	500*	***

41	East Side Potter Valley, CR 240		5.81- 6.08	Realign & reconstruct w/ drainage, base, double seal and relocation of utilities.	174 *	***
42	North State Street,	Traffic Corridor Study between Low Gap Rd. & Hensley Creek Rd.		Plan and reconstruct traffic corridor improve- ments along North State St. between Low Gap Rd. & Hensley Creek Rd. including intersections along corridors.	**	***
43	Branscomb Road, CR 429		22.3- 23.5, 23.5- 24.8, 24.8- 28.10	Realign & reconstruct w/ drainage, base & AC paving.	**	***
44	Old Toll Road, CR 108	McDowell Creek	0.05	Bridge & deck rehabili- tation.	**	***
45	Old Toll Road, CR 108	Coleman Creek	2.65	Bridge and deck rehabili- tation.	**	***
46	Hibbard Road, CR 121	Rancheria Creek	0.02	" " "	**	***
47	Robinson Creek Rd, CR 125	Robinson Creek	0.90	" " "	**	***
48	Reeves Canyon Rd., CR 219	Forsythe Creek	0.48	" " "	**	***
49	Wattenburg Rd, CR 332	Grist Creek	0.50	" " "	**	***
50	Reeves Canyon Rd, CR 219	Mill Creek	3.21	Reconstruction of bridge across Mill Creek.	**	***
51	Pine Avenue, CR 244	East Canal	0.10	Planned bridge replace- ment of existing wooden structure across East Canal.	**	***



52	Hearst-Willits Road, CR 306	Salt Creek	12.74	Construct concrete slab on top of existing con- crete abutment of bridge across Salt Creek.	**	***
53	Hearst-Willits Road, CR 306	Sagehorn Creek	13.46	" " "	**	***
54	Lake Mendocino Drive, CR 227B	R&R Crossing	0.37	Reconstruct roadway to accommodate automatic railroad crossing protec- tion.	124	***
55	Hearst Post Office Road, CR 306A	No Name Creek	0.88	Construct concrete slab on top of existing abutments for bridge.	**	***

\* Estimated in 1979 Dollars.

\*\* Cost is not estimated.

\*\*\* Construction date is not set.



CITY OF WILLITS  
MUNICIPAL AIRPORT

PLANNING PROGRAM SUMMARY

UPDATE SEPTEMBER, 1980

<u>Improvements</u>	<u>Cost</u>	<u>F/Y Planned</u>
Surface existing dirt tie downs north & west of present hangar	Completed	-----
Install drain in future taxiway, including provision for installation of taxiway and V.A.S.I. cable	110	80-81
Install taxiway from intersection of runway turn off, North to end of Runway "16", dirt work, blacktop & painting stripes	170	81-82
Purchase approximately 40 acres of land between present airport and Brooktrails property for expansion & to prevent encroachment by housing developments	55	82-83
Install V.A.S.I.	60	82-83
Purchase & install perimeter fence along western property for security	80	83-84
Install emergency perimeter road suitable for 4 wheel drive vehicles along property line fence. Road to be improved to all weather at some future date.	110	84-85



CITY OF UKIAH  
MUNICIPAL AIRPORT

PROPOSED FIVE-YEAR CAPITAL IMPROVEMENTS

	<u>Grant Funds</u>	<u>City Funds</u>	<u>Lease Purchase</u>
<u>1980-81</u>			
1. Clear Zone Acquisition (Federal Grant Funds)	\$300,000	\$30,000	
2. Purchase Ten Portable T-Hangars			\$ 70,000
3. Construct Two Additional Taxiway Connections to Runway (State Grant)	15,300	1,700	
4. Construct Taxiway Extension to South End of Runway (State Grant)	118,800	13,200	
5. Construct Holding Areas at Both Ends of Taxiway (State Grant)	25,200	2,300	
6. Runway and Taxiway Repairs and Seal (State Grant)	<u>43,200</u>	<u>4,300</u>	<u>.</u>
	\$502,500	\$ 52,500	\$ 70,000
TOTAL ESTIMATED ANNUAL EXPENDITURES			\$625,000

<u>1981-82</u>			
1. Clear Zone Acquisition (Federal Grant Funds)	\$300,000	\$ 30,000	
2. Administration Building Addition			\$ 70,000
3. Install Taxiway and Parking Apron Lighting (State Grant)	31,500	3,500	
4. Pave Transient Area Auto Parking Lot	<u></u>	<u>16,000</u>	<u></u>
	\$331,500	\$ 49,500	\$ 70,000
TOTAL ESTIMATED ANNUAL EXPENDITURES			\$451,000



City of Ukiah Municipal Airport  
Proposed Five-Year Capital Improvements

Page 2

	<u>Grant Funds</u>	<u>City Funds</u>	<u>Lease Purchase</u>
<u>1982-83</u>			
1. Clear Zone Acquisition (Federal Grant Funds)	\$300,000	\$ 30,000	
2. Purchase Five Portable Twin T-Hangars			\$ 50,000
3. Revise Auto Parking Lot and Repair Entrance Paving		18,000	
4. Construct Storm Drain South of T-Hangars		<u>22,000</u>	
	<u>\$300,00</u>	\$ 70,000	\$ 50,000
TOTAL ESTIMATED ANNUAL EXPENDITURES			\$420,00

<u>1983-84</u>			
1. Clear Zone Acquisition (Federal Grant Funds)	\$	\$	
2. Reconstruct Runway (Future Grant)	1,596,600	177,400	
3. Reconstruct Taxiway - Except South Extension (Future Grant)	<u>393,300</u>	<u>43,700</u>	
	\$1,989,900	\$ 221,100	
TOTAL ESTIMATED ANNUAL EXPENDITURES			\$2,211,00

<u>1984-85</u>			
1. Clear Zone Acquisition (Federal Grant Funds)			
2. Purchase Five Portable T-Hangars			\$ 50,000
3. Repair and Reconstuction - Parking Apron Areas		<u>52,700</u>	
		\$ 52,700	\$ 50,000
TOTAL ESTIMATED ANNUAL EXPENDITURES			122,70

City of Ukiah Municipal Airport  
Proposed Five-Year Capital Improvements

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TOTAL ESTIMATED FIVE-YEAR EXPENDITURES

\$ 3,829,



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## IV. SAFETY



MENDOCINO COUNTY GENERAL PLAN

SAFETY ELEMENT

ADOPTED BY

MENDOCINO COUNTY BOARD OF SUPERVISORS

MARCH 12, 1975

REVISED:

SEPTEMBER 24, 1981

MARCH 14, 1983

NOVEMBER 26, 1984

DECEMBER 9, 1991

Mendocino County Department of Planning and Building Services  
Office: 589 Low Gap Road  
Mail: Courthouse  
Ukiah, CA 95482



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SUMMARY OF FACTS RELEVANT TO POLICIES AND STANDARDS  
FOR THE  
SAFETY ELEMENT TO THE MENDOCINO COUNTY GENERAL PLAN

This executive summary of the Safety Element of the Mendocino County General Plan gives a brief background discussion relevant to the policies and standards in the Element. The Safety Element is specifically concerned with fire and flood hazards within the County. The Seismic Safety Element has been prepared separately.

Fire

Mendocino County's land area is predominantly inland and coastal wildland.<sup>1</sup> Lumbering, agriculture and recreation comprise the major industries in the county, although land development for residential and recreation use is an increasingly significant and contrasting land use. As this urban development encroaches upon and interfaces with the wildland areas of the county, wildfire becomes the most potentially hazardous fire problem requiring prevention planning. (5)

Fire prevention and suppression in land areas of Mendocino County outside of incorporated cities and federal lands is the responsibility of the California Department of Forestry (CDF), and local fire districts. To aid their fire prevention effort, CDF has prepared a written guide for local government planners, developers and fire agencies. This publication, Fire Safe Guides for Residential Development in California, describes the use of the Fire Hazard Severity Classification to determine the extent of the fire hazard in a particular area based upon three factors: fuel load, weather, and topography.

The CDF recommends this guide for use "by local government planners to clarify degrees of fire hazard in wildland areas and specify conditions under which use and development of specific areas can take place." After fire hazard areas are classified in this manner, they can be delineated on USGS topographic maps and distributed to all concerned parties to more effectively administer the fire control effort. (5)

<sup>1</sup> Wildland refers to mountains and hills in uncultivated, natural state, and covered by timber, woodland, brush or grass. (4)

In January 1980, the CDF office in Willits, California, applied the Fire Hazard Severity Classification to fire safety standards in a report specifically prepared for Mendocino County. The CDF suggested that this report be incorporated into the safety element of the County's General Plan. (6) This report, along with the Fire Safe Guides, should form the basis for specifically assessing fire hazards and implementing the policies of the Safety Element.

#### Summary of Planning Guides and Standards for Fire Safety

The following publications are useful in the development of policies, specifications, and standards involved in fire safety planning by local government:

Uniform Building Code<sup>2</sup> covers the fire, life and structural safety aspects of all buildings and related structures. (7)

Uniform Fire Code sets out provisions necessary for fire prevention in terms and requirements consistent with other Uniform Building Codes. (7)

Uniform Fire Code Standards contains National Fire Protection Association Standards and Uniform Building Code Standards referenced by the Uniform Fire Code. (7) It is a new (1979) publication to accompany the Uniform Fire Code.

Fire Safe Guides for Residential Development in California is a joint guide by California Department of Forestry, U.S. Bureau of Land Management, and the U.S. Forest Service. It offers local government planners the information and fire safety standards needed to make land use policies and zoning criteria in the interest of reducing the possibility of wildfire disaster.

Fire Guides for California Watersheds is a pamphlet which discusses California fire problems and recommendations for land use planning and zoning ordinances. Developed by the County Supervisors Association of California.

<sup>2</sup> The Uniform Building Code, Uniform Fire Code, and Uniform Fire Code Standards are published by the International Conference of Building Officials. Revisions are published every three years. Latest Edition is 1979.

## Flood

Mendocino County has a temperate semi-arid climate characterized by dry, rainless summers and wet winters. From October through April, storms forming over the Pacific Ocean can bring flood-producing rainfall to northern coastal California. The watershed characteristics of the County determine the predominant storm runoff pattern and subsequent manner of flooding. Flooding in Mendocino County would likely occur from the overflow of the Russian or Eel Rivers, as well as the overflow of smaller rivers and numerous creeks and streams in the County. A possibility for flooding also exists from dam or levee failure.

Flood control policies and procedures have generated from two basic methods of preventing flood damage: keeping the water away from people -- the structural approach to flood control, or keeping people away from the water -- the nonstructural or flood plain management approach. (2)

### Structural Flood Control

Structural flood control is characterized by constructed flood control projects. Reservoirs, levees, bypasses, and channel improvements are means of structural flood control efforts.

This approach was used almost exclusively in California until the rapid population growth and land development of the last 30 years caused flood damage potential to increase at a faster rate than flood control structures could be built. (2) In addition, increased environmental awareness and costs have caused projects to be delayed and/or cancelled due to environmental constraints or lack of adequate funds. As this has occurred, greater emphasis has been placed on the flood plain management concept of flood control.

### Flood Plain Management Approach

Flood plain management involves limiting land uses to those that experience the least adverse impact when flooded. Although it may be more economical than the structural approach, planning and control by local government is essential to the success of this method. A further basic requirement for this approach is that flood-prone areas be adequately defined and delineated. There are federal and state agencies specifically designated to assist local governments in this effort. Under the federal flood insurance program, the U.S. Department of Housing and Urban Development has developed maps which identify the floodways and floodway fringes that comprise a flood plain. The floodway is the enlarged water course or channel in an overflow situation, while the floodway fringe is the land area immediately adjacent to the floodway. The floodway fringe, although it may not be completely under water, may



experience some floodwater encroachment. For land use planning purposes the floodway must be open for unobstructed water passage; therefore, it should have no building development. (2) Building development may occur on the floodway fringe if the structures are elevated above the height of the design flood water level by piles or earthfill. This is known as floodproofing. A one-in-one-hundred year flood is most often used for floodplain design.

### Additional Flood Control Efforts

In addition to flood control structures and flood plain management, local governments must often operate, inspect and maintain existing flood control projects and activities within their jurisdiction. An effective and timely flood warning and forecast system, as well as an emergency plan that adequately addresses flood emergencies, may significantly reduce damage from flooding. A joint Federal-State River Forecast Center in Sacramento uses weather forecasts and water level reports from the California Central Valley and North Coast to predict water levels in these areas and issues public warning bulletins of potential flooding.

### Responsible Agencies

The following government agencies have responsibilities relative to flood control. These responsibilities include assisting local governments in formulating and administering policies, standards, and procedures for flood control and flood damage prevention: (2)

Local Flood Control District

Local Public Works Department

California Department of Water Resources

State Reclamation Board

U.S. Army Corps of Engineers

U.S. Department of Agriculture, Soil Conservation Service

Federal Flood Insurance Administration

U.S. Department of Commerce, National Weather Service



## REFERENCES

1. California Department of Water Resources, Flood Control Operations in Northern California, (pamphlet).
2. California Department of Water Resources, Flood Damage Prevention, (pamphlet).
3. California Department of Water Resources, Flood Forecasting in California (pamphlet).
4. California Division of Forestry, Recommendations to Solve California's Wildland Fire Problem, June 1972, Task Force on California Wildland Fire Problem.
5. California Division of Forestry, U.S. Forest Service, U.S. Bureau of Land Management, Fire Safe Guides for Residential Development in California, (unpublished guide).
6. California Division of Forestry (Willits Office), Fire Hazard Severity Classification and Fire Safe Requirements for Land Divisions, Mendocino County, Abstract, January 1980.
7. International Conference of Building Officials, Uniform Building Code, 1979 Edition.



## INTRODUCTION

### PURPOSE

The Safety Element of the Mendocino County General Plan examines environmental threats to public safety and explores the relationships among natural hazards and developed or developing parts of the environment. It summarizes the pertinent findings and defines the general nature of the regulations and programs needed to prevent or mitigate the effects of natural hazards. The Safety Element has three major divisions:

1. Introduction
2. Research and Background Information
3. Statement of Development Policies

### SCOPE

In Mendocino County public safety is threatened by five acts of nature:

1. Earthquakes
2. Tsunamis
3. Landslides
4. Fire
5. Flooding along streams and in river valleys

Earthquakes and related tsunamis have been covered in detail in the Seismic Safety Element. Land use policies and general recommendations in the Seismic Safety Element are included in this element by reference. Since some landslides are triggered by earthquakes, landslide potential is covered in the Seismic Safety Element. However, annual slides may be considered a "natural" occurrence in Mendocino County because of the in-

herent conditions of soil formation and climate. The subject is thus given special attention in the Safety Element. Fire and inland flood hazards are covered exclusively in the Safety Element.

Nuclear war and civil disorder are threats to local safety and local plans to deal with such major catastrophes are part of national and state-wide efforts. Mendocino County's Emergency Plan which deals with these aspects of safety is discussed in this report. Finally, a brief discussion of structural codes is included.

## LEGAL REQUIREMENTS

The legal authority for the Safety Element of the General Plan is California Government Code Section 65302(i), which requires:

A safety element for the protection of the Community from fires and geologic hazards including features necessary for such protection as evacuation routes, peak load water supply requirements, minimum road widths, clearance around structures and geologic hazard mapping in areas of known geologic hazard.

### State Guidelines

The California Council on Intergovernmental Relations published General Plan Guidelines in September 1973, to further define the intent and requirements of the law. The Guidelines point out that the Safety Element should contribute to land use standards and policies by relating the type and intensity of land use to the estimated levels of risk and to the availability of services and facilities to combat apparent risks. The Guidelines also note its particular relationship to the Circulation Element and its more general relationship to other elements of the general plan. In Mendocino County, as elsewhere, the Seismic Safety Element and the Safety Element are almost inseparable and should be adopted and used as a pair.

### Concept of Risk

Risk, by definition, implies calculating the outcome of actions in relation to future events. With incomplete knowledge of the future, estimating "level of risk" implies some imprecision. The Guidelines recognize that this can be done in broad but useful terms by defining the following three levels of risk:

1. Acceptable risk - The level of risk below which no specific action by government is deemed to be necessary.

2. Unacceptable risk - Level of risk at which specific action by government is deemed necessary to protect life and property.
3. Avoidable risk - A set of conditions where potential risk in one location need not be taken because private or public objectives can be achieved in other, non-risk situations at the same or less cost. In this case, government action to preclude risk taking is justified.

### Acceptable and Unacceptable Risks

The concept of acceptable and unacceptable risks recognizes that perfect safety is unattainable or so confining and costly as to be undesirable even if approached. Extremely unacceptable risks are easy to determine, for example, buildings should not be placed on known active faults and the laws which prohibit such construction are readily understood. Likewise, no one questions the standards of construction required to insure a high degree of safety in schools and hospitals. The Guidelines recognize that other risk situations which require some local control and regulation are less clearly definable. In some cases an exact and clear definition of acceptable risk is impossible. Existing and proposed development will be looked at differently in most cases of code enforcement and acceptable risk for rural development may be different than that for development at an urban density. In the last example, the relative number of people exposed to the risk is a factor. Some people value rural isolation sufficiently to build second homes or permanent residences in remote areas with relatively high hazards, few services and bad roads. Homes are widely scattered and only the few families and individuals involved are inconvenienced or endangered; the overall risk is therefore low in comparison to the risk which would occur with intensive development in a similar location. Necessary government action would be different in both cases. For real rural areas, government action might be limited to making maps of high risk areas available to potential buyers and publicizing the fact that community services such as school bus stops or fire protection are not readily available. For urban development government action to make risk acceptable would have to be much more extensive.

### Avoidable Risk

The avoidable risk concept applies both to private development decisions and to public actions. Permitting a new subdivision in a remote area with poor access creates an avoidable risk since there are other safe or less remote areas in which to accommodate new subdivisions. Also, a subdivision in a forest area might endanger valuable timber resources or otherwise damage the environment and should be avoided. Choices must sometimes be made. One public body might want to build a dam for irrigation or domestic water supply; however, there may be a strong possibility of development in the valley below the proposed dam at some future



date, making such a dam prohibitively expensive. The choice of solution not only must avoid risk, but also must be acceptable economically and socially. The foregoing discussion suggests the futility of attempting to evaluate precisely the risk levels in all locations and under all circumstances. However, the following sections of the report discuss specific hazards and evaluate risks as far as possible. Sometimes, as in the delineation of flood plains, it is necessary to proceed on the basis of limited information. In future years, as more detailed follow-up studies are made and new regulations formulated, it may be possible or necessary to refine risk levels in some parts of Mendocino County.

## RESEARCH AND BACKGROUND INFORMATION

### LANDSLIDE HAZARD

Landslides are an evolutionary process in the landscape which must be understood and respected. Slides and soil creep are common in most of the hilly and mountainous country in Northern California. In Mendocino County slides occur, in some cases, on slopes as gentle as 3 to 5 percent due to the natural instability of the surficial (surface) material.<sup>1</sup>

The amount of landsliding in any area is affected by geologic and hydrologic factors, such as the degree of water saturation, the strength of the rock, the slope angle, the mass of the deposit and the types and extent of the vegetative cover.<sup>2</sup> It can also be disastrously accelerated or triggered by man-made actions such as unwise grading, deforestation and modifications to the land which are deemed necessary for development. The material of the Franciscan Assemblage, comprising most of the county, is highly fractured and sheared and in its weakened condition is unstable and slide prone,<sup>1</sup> particularly during the typically heavy winter rainfalls, from late November through March, when the soil becomes highly saturated.

The winter storms of 1973-74 triggered extensive sliding throughout the County. Major damage was done to County roads, the County was declared a disaster area by State and Federal governments and received a federal grant to help repair damage. The County Road Department supplied information to map the areas of road slides during this disastrous year and these data are included as part of the Safety Element. Information on State highway and off-road slides is not available but the scale of the hazard is sufficiently demonstrated by the County road information. If a major earthquake occurred to set-off slides in the rainy season, slide damage would undoubtedly be even more extensive and serious than that shown on the map.

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1 Cooper, Clark Associates, 1972

2 Tri-City Seismic Safety and Environmental Resources Study, 1974

## FIRE HAZARD

### General Consideration

The California Department of Forestry divides Mendocino County into three types of areas, each with a different fire potential: timber, brush and grass-oak woodlands. The County's relatively high rainfall makes it less subject to fire than semi-arid southern California counties, such as San Bernardino. However, a timber fire will result in a much greater dollar loss than a fire in less productive brush land.

Heavy timber lands do not burn as readily as brush or grass land but once timber is set afire it is more difficult to control and extinguish. Rough topography and poor access in the County contribute to fire control problems. The dollar loss depends on the market value of the timber at the time of the fire, but the cost is high and increasing. Grass-oak woodlands are generally used in the County for grazing and can be kept free of brush. When this is done fires are relatively easy to control and are generally less damaging.

Well tended grazing land burns over without destroying any trees and indeed may be purposefully burned under controlled conditions to keep down undesirable brush and improve the pasture. Chaparral or brush lands occur naturally or result from untended and unused pasture land and cut-over timber land. If left untended for many years, brush lands become very dense and thus very dangerous fire areas. Where brush lands and urbanization meet, a hazardous fire zone naturally ensues.

### Protection

Fire protection is provided by the National Forest Service in Mendocino National Forest, by the California Department of Forestry in "wild lands" and by local fire departments and districts. Technically the local districts are the only ones which are charged with structural protection, the State and Federal agencies being limited to wild land protection. The City of Ukiah has a full-time professional staff; some districts have one or two professionals augmented by volunteers and others are wholly volunteer. It is beyond the scope of this study to evaluate the departments or to make recommendations concerning expansions, consolidations or changes. The California Department of Forestry reported that the local districts are well organized and efficient at the present time.

Mendocino County is in the North Coast Region of the California Department of Forestry, whose regional office is in Santa Rosa, with local county operations headquartered in Willits. The Department maintains permanent ranger stations and sets up seasonal fire watches at additional locations. Air operations to fight fires are carried out from Ukiah airport. By

authority of California Public Resources Code Section 4291, the State Department of Forestry also inspects and enforces the mandatory minimum clearance of 30 feet around structures. The Department has also developed fire safe regulations for land divisions in wild land areas.

Overall, the level of fire protection in Mendocino County seems consistent with that provided in other rural California areas and is as adequate as can be expected in such a large, sparsely populated area. Some recommended considerations for future action are contained in the Safety Element.

## FLOOD HAZARD

Information on past and potential flooding is summarized from publications of the United States Geologic Survey and from the Comprehensive Framework Study on Flood Control of the Water Resources Council, an interagency committee reporting to the governor and to Congress. The Framework Study finds

. . . that serious flood problems exist in the California Region. Although existing flood control measures have been very effective in their respective areas, damages continue to increase. Except for the inherent flood risk, most of the flood plain lands are ideally located for residential, commercial, industrial and agricultural development. As the population and economic activity . . . continue to grow, recurring floods will cause increased loss of life, human suffering, damage to property, and loss of goods and services . . . Although complete flood protection is an unrealistic goal, an economically justifiable degree of flood protection should be secured for the region. As a minimum, protection from a once-in-10-year flood should be given to agricultural areas and protection from the once-in-100-year flood should be provided for urban areas. In developing the future program for alleviation of flood damages, consideration was given to structural and non-structural methods . . .

The flood control program recommended to state and federal agencies is "at the preliminary or reconnaissance level . . . " It recognizes the seriousness of the problem in an area including the County and, although it does not go into extensive detail on all the Mendocino County streams, the approach is comprehensive and will provide a useful guide for special studies and action programs at the local level.



## Scope of Problem in Mendocino County

The Safety Hazards Map, a part of the Safety Element, shows areas of the County subject to flooding during the 1964 flood.\* Mendocino County falls into two of the study's sub-regions: the North Coast Area (from just north of the mouth of the Russian River in Sonoma County to and including the Klamath River Basin in southern Oregon) and the San Francisco Bay Area (taking in the Russian River Basin). Limited information on the history of flooding and damage has been compiled by individual streams; that which applies to Mendocino County is given on the following pages. Insufficient information is available for the County; for instance, only one damage center (Guerneville, which is in Sonoma County) is listed for the Russian River and the damage for the various segments of the stream is not tabulated separately. The tables give a general indication of existing and future scale of the problem but need refining for local application in Mendocino County.

## Present Status of Flood Damage Prevention Measures

Existing flood control measures on any of the coastal streams are very limited. They include some flood forecasting and minor levee and channel projects. Flood forecasts are distributed through the River District Offices in Eureka (for the coastal streams) and San Francisco (for the Russian River). The points where forecasts of water levels are made are shown on the Safety Hazards Map. Lake Mendocino, created by Coyote Dam above Ukiah, provides substantial protection along the upper Russian River. It has a maximum of 48,000 acre feet of flood storage capacity during the most critical flood periods, controlling run-off from a drainage area of 105 square miles. As indicated on the Safety Hazard Map, it does not offer protection for the Ukiah area during a flood of the magnitude of the 1964-65 winter flood, a hundred year flood, or even lesser floods such as that which inundated State Street last winter (1973-74). Numerous small detention structures provide an additional storage capacity of 5,000 acre-feet along lower portions of the River in Mendocino and Sonoma County. These are of varying quality and for the most part have been only partially effective. No detailed information is given in the Framework Study on watershed treatment for the North Coastal Area, although some measures such as critical area planting, tree planting, range seeding, fire prevention and suppression have been carried out in unspecified sections of the sub-region. Watershed treatment in the Russian River Basin is limited to Sonoma County. Flood Plain information studies have been made for the South Fork of the Eel River and for portions of the Russian River Basin.

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\* The Framework Study refers to the Flood of December, 1964 as being "of unprecedented intensity for so vast an area." It is assumed to represent the 100-year-flood and thus, the chances of like flooding occurring in any one year are 1 in 100.



COMPREHENSIVE FRAMEWORK STUDY, 1971  
Water Resources Council  
ESTIMATED FLOOD DAMAGE FOR  
THE 100-YEAR FREQUENCY FLOOD  
FOR SELECTED STREAMS

Study area/ stream	Area inundated (1,000) acres	Forest & range resources	Forest & range facilities	Crop & Pasture	Flood Damage <sup>1</sup> - (\$1,000)				Industrial & utilities	Public Faci- lities	Total
					Other Agricul- tural	Land	Residential & Commerical				
Westport Stream Gp.	0.3	0	0	34	10	3	1		21	0	69
Ten Mile River	0.8	0	0	138	11	14	36		53	20	272
Noyo River	0.3	0	5	0	0	4	115		107	6	238
Big River	0	0	0	0	0	0	0		44	0	44
Navarro River	1.4	1	18	280	46	106	200		69	33	753
Alder Creek	0.5	0	0	8	1	3	0		18	0	30
Garcia River	2.4	0	0	422	7	69	0		0	0	498
Gualala River	1.5	16	0	6	0	6	0		0	56	84
Russian River	51.4	3	0	3,634	1,103	956	11,986		156	5,162	22,910
Dry Creek	3.6	0	0	632	185	181	110		9	116	1,233
Sulpher Creek	0.1	0	0	1	3	3	1		0	3	11
Santa Rosa Creek	1.1	1	0	7	7	1	10		0	50	76

<sup>1</sup> Based on July 1965 prices, economic conditions, and project conditions

COMPREHENSIVE FRAMEWORK STUDY, 1971: WATER RESOURCES COUNCIL  
EXISTING  
ESTIMATED AVERAGE ANNUAL FLOOD DAMAGE FOR URBAN  
AREAS WITH SIGNIFICANT FLOOD PROBLEMS  
BASED ON 1965 CONDITIONS OF PHYSICAL AND ECONOMIC DEVELOPMENT

Study area/ stream	Damage center	Average annual flood damages (\$1,000)				
		Residential	Commercial	Industrial & utilities	Public facilities	Total
Russian River	Guerneville	620	290	9	225	1,144
Navarro River	Anderson Valley	2	6	5	0	13

PROJECTED  
SUMMARY OF ESTIMATED AVERAGE ANNUAL FLOOD DAMAGE FOR URBAN AREAS WITH SIGNIFICANT FLOOD PROBLEMS  
-PRESENT AND FUTURE CONDITIONS OF ECONOMIC DEVELOPMENT  
WITH EXISTING FLOOD CONTROL MEASURES-

Study area/ stream	Damage center	Average annual flood damages <sup>1</sup> (\$1,000)			
		1965 economic conditions	1980 economic conditions	2000 economic conditions	2020 economic conditions
Russian River	Guerneville	1,144	2,153	4,604	6,240
Navarro River	Anderson Valley	13	22	53	121

<sup>1</sup> Damages are based on July 1965 prices and project conditions and estimated economic conditions for the year shown.

## Limitations of the Framework Study in Mendocino County

From the brief summary given, it is clear that the Framework Study does not supply all the information needed in Mendocino County. Additionally, many of its recommendations have become out of date through the passage of the Wild Rivers Act (Senate Bill 107). Mendocino County and Round Valley took a decisive role in passage of this legislation.

The Framework Study advises that not all urban areas have been critically examined and recommends that the various jurisdictions take action to define problems and determine the remedial and preventive measures needed. This is certainly true for the Ukiah area and for the various coastal streams which received very little attention in the Study. Anderson Valley on the Navarro River is recognized as a major damage center but remedial measures are not recommended. Other known problems such as those at Fort Bragg were not covered and much local effort will have to be expended to develop a real flood protection program.

## Federal Assistance Available

The Federal Flood Plain Management Services Program ( a HUD program ) is available to assist qualified agencies. It might be appropriate for Mendocino County and is summarized here. This program was established to provide Federal, State and local governmental agencies with flood hazard information that would: (1) serve as a guide for future development of land, (2) provide a basis for regulation of land use to avoid future flood damage, and (3) assure that Federal agencies will take proper cognizance of the flood hazards associated with the development and management of flood plain areas. As it is presently constituted, the program includes:

Flood Plain Information Reports: Flood plain information reports are prepared at the request of State and local governmental agencies to delineate flood plains in communities throughout the nation. These reports contain illustrative and narrative material on past floods, and similar data on floods that may reasonably be expected to occur within a community area in the future.

Technical Services and Guidance to Governmental Agencies: Federal, State and local governmental agencies are provided assistance with the following: interpretation and application of data in flood plain information reports; preparation of flood plain regulations; suggestions for floodway areas and evaluations of the effect of floodways; information on flood damage reduction by various structural and non-structural measures; and evaluation and use of flood hazard data to make wise decisions on the locations of public buildings and other publicly owned facilities, and on subdivision development or other land uses where there is a Federal interest.

Research, Guides and Pamphlets: Research studies are directed towards improvement of methods and procedures of flood damage reduction. Guides and pamphlets are prepared for the use of Federal, State and local governments and private citizens in planning and implementing programs to reduce the flood damage potential of an area.

Comprehensive Flood Damage Prevention Planning: Planning efforts at all appropriate governmental levels are considering flood control works, flood proofing, flood forecasting, zoning, subdivision regulations, building codes and policies that will work in combinations or separately to provide the best solution to the flood problem associated with the community. Engineering services and technical assistance and guidance are provided throughout the course of planning and implementing measures needed to reduce the flood damage potential.

#### Dam and Reservoir Hazards

Serious damage to the Van Norman Reservoir above the heavily populated San Fernando Valley occurred during the earthquake of 1971. Residents were evacuated from the area which would have been inundated had the dam failed. Fortunately, the reservoir was successfully drained without dam failure and disaster was averted. This example of potential disaster explains recent State legislation requiring the mapping of all potential inundation areas below any dams ( public or private ) which are above a specified height and/or capacity; further, the legislation requires governments to take account of potential inundation in land use planning and land use regulations once the information on problems is available. The State Office of Emergency Services is charged with carrying out the program and dam owners are required to hire engineers to do the actual mapping. Obviously the scale of the problem, in terms of the population endangered, is much smaller than that of the San Fernando Valley. Nevertheless, there are twenty dams in Mendocino County that fall under the regulations. Fifteen have been exempted from the requirement of preparing an inundation map as no substantial damage is likely to result from dam failure. Inundation maps have been prepared for Coyote Dam, Scott Dam, Morris Dam, Round Mountain Dam and the Lake Emily Dam at Brooktrails. Inundation maps are on file in the Mendocino County Planning Department Office.

#### DISCUSSION OF STRUCTURAL AND HEALTH CODES IN RELATION TO SAFETY

During the past two decades, building technology has become more complex and standards of construction have risen; as a result, codes for public and private construction have become increasingly complex and more comprehensive in scope. To a great extent, codes have been standardized across major portions of the nation. The purpose of structural, housing and health codes is to protect the health, safety and welfare of citizens and this has many implications for the Safety Element. Codes are implementation measures -- they are laws rather than broad policies or programs for safety. It is not within the scope of this study to make detailed studies of the codes or to recommend specific revisions or changes. However, in Mendocino County and elsewhere, existing codes and enforcement procedures have been criticized strongly in recent years, as being unduly restrictive and therefore a brief exploration of some of the major issues is included here.

#### New Construction and Existing Buildings

There are many existing structures which were built under old codes or even prior to the passage of the first code. These offer a different risk potential than those built to more modern standards. When the older buildings are used for public assembly or occupied by a sizable work force, the risk potential is greater than in an old structure used only



for storage. Many older buildings still have a useful life if risk can be reduced to an acceptable level. However, the means of reducing risks must be economically feasible. This is frequently not possible if structures must precisely meet existing codes. The high costs of construction and energy have led to some innovative and flexible approaches to this problem. One approach, emanating from Long Beach, is to give a choice to an owner of a building which does not have the required code capacity to resist lateral forces. He may reduce the occupancy of the building, reduce its life expectancy, strengthen the structure, or effect some combination of the three. Overall risk is reduced by limiting the number of people exposed, the duration of exposure, or the danger of structural failure. This flexibility permits a reasonable solution to be chosen in a particular situation. It has most application to private structures used for industrial, commercial or public assembly purposes but could apply to older dwelling and apartment structures as well.

### Rehabilitation of Housing

An older house, even one that is not in severe disrepair, will usually have some minor code violations; where housing has deteriorated, violations will run from minor (insufficient electrical outlets) to major (dangerous wiring or insufficient plumbing). In some cases it would be economically feasible to improve the house so that it would not be a hazard but not feasible to bring it up to the standards required for new construction. A permit for rehabilitation, however, will generally require all major and minor violations to be corrected. In this period of high building costs and housing shortages, there is interest in developing special rehabilitation codes for older housing so the useful, safe life of homes can be extended. In order to meet economic pressures, an owner might be permitted to plan a five year rehabilitation program with serious violations receiving the immediate attention and lesser matters deferred. Thus, dangerous wiring could be replaced and the roof mended immediately, a new room added later and finally old, inadequate plumbing replaced. Ideally, the building inspection department would be given resources and time to actually assist in planning rehabilitation and remodeling with owners and giving advice on materials and procedures. This would be a positive role for the department and would require an additional budget. It could pay off in terms of safety and health however, and is an approach which may be considered.

### Rural and Urban Standards

Present housing codes give little choice in terms of facilities and standards required in a single-family home. It is logical to assume that rural families need and deserve the same safety and health standards of city families, yet some factors are variable: a septic tank is unsafe in San Francisco, is safe in suburban large lot subdivisions and could probably be dispensed with entirely in a rural home site of 10 to 20 acres.

Criticisms of present blanket codes range from unnecessary high costs, ecological unsoundness, lack of freedom of choice and infringement of constitutional rights, through the contention that innovation in technology is stifled. A variable code would have some advantages. On the other hand, it might be difficult to enforce equitably and there might be objections from owners who already had met or were required to meet the



existing standards. As one solution, it is suggested that some specified rural sections of the County be permitted special standards under certain conditions of location, density, et cetera. Everyone in the specified areas would then be subject to the same laws and treated equally. In other more urban areas, conventional standards would be in force. This could do away with the criticism of a dual standard and would permit flexibility for home owners through choice of location.

Owner-built houses and innovative construction methods sometimes need more supervision and more inspections than conventional homes, in order to ensure reasonable safety and health standards. This should be recognized and special standards should not be interpreted as a way of doing away with all standards. The building inspection department needs to assume an advisory role as well as carrying out its traditional enforcement duties.

Major code revisions would be required to carry out the suggested approach. First, the general concept of special standards would need to be thoroughly explored and accepted by the public agencies involved. Some detailed technical studies (including a legal analysis) would have to be carried out prior to changes in the code.

## EMERGENCY PLAN

### Analysis

Mendocino County's present Emergency Plan was prepared in April 1975 and has since been updated twice, the most recent revision having been completed in April 1981. The Plan is revised as necessary by the County Emergency Services Director in accordance with State and Federal directives for Civil Defense. The County's Plan is a part of a Comprehensive Emergency Service System starting with the Federal Program that includes State and Local Plans as major components. It sets up the authority and procedures for Emergency Response. It would automatically be activated by a state of war emergency or by order of the Chairman of the Board of Supervisors in time of local emergency. The County organization is the link between local jurisdictions and the State Civil Defense Organization. The Plan sets up procedures to coordinate local government and private resources and provides the vehicle for mutual aid among jurisdictions, primarily in the case of nuclear war.

The major emphasis in the Administrative Plan is on a "War Emergency" and, in line with national policy at the time, it is assumed that the greatest threat in any part of the United States is from nuclear attack. Administrative organization to deal with such a catastrophic event is therefore the primary concern in the Plan. This emphasis, however, establishes the organization and authority necessary to respond to natural hazards. Currently, the State Office is shifting its emphasis more towards natural hazards and local contingency planning which will be more applicable to Mendocino County.

The section on "Major Peacetime Emergencies" recognizes that "the potential of a major calamity increases with the continuing urbanization of previously unpopulated areas, and with the advent of industrial processes which utilize hazardous materials." The first is clearly applicable to Mendocino County in the case of any urbanization of remote areas. The second, applying to industrial process, could become applicable. Basic emergency situations which the County will respond to are listed as earthquake, seismic sea waves, flood, fire, accident (transportation or industrial) and civil disturbance. These statements are complete enough to indicate some awareness of potential local needs. The remainder of the section on major peacetime emergencies sets the detailed procedures for each stage of an emergency in terms of the organizational structure among the various responsible agencies.

Attachment B of the Emergency Plan outlines four stages of basic action. The first is Readiness Condition Four, "increased readiness" for either war or a peacetime emergency. The other three stages apply primarily to nuclear attack. Readiness Condition Four is intended to be operative in normal times. Attachment B, although general, outlines the steps to initial emergency preparedness on a county-wide basis:

#### Actions

- a. Develop and improve emergency organization, staffing resources and supporting systems.
- b. Review, update and maintain the basic operations plan, annexes, SOPs, alert lists, and prepare inventory lists of emergency manpower and material resources; designate relocation sites for essential resources; issue implementing administrative orders, updating as necessary.
- c. Develop the maximum practicable fallout shelter capacity and readiness in existing structures; prepare plans for emergency construction, stocking, use and management of expedient fallout shelters.
- d. Develop and improve the Emergency Operating Center (EOC) and other control facilities.
- e. Improve emergency communication, warning, radiological defense, situation intelligence, emergency public information and mass care systems.
- f. Conduct and participate in tests, exercises and training programs; prepare plans for accelerated emergency training.
- g. Conduct public information programs to educate people in readiness and survival actions.

## Critique of the Plan

The Emergency Plan is clearly designed to be general in nature and the efficiency of its implementation is directly related to the maintenance of agency's annexes, standard operating procedures, alert lists and resource inventories. However, tests, exercises and public education in emergency preparedness are clearly worthwhile. The Plan no doubt fills an important need in alerting officials and agencies to the kinds of organizations needed in emergency situations. It outlines the chain of command and defines the type of action required at all levels of government at various stages of an emergency. However, as noted, only the first stage applies to most natural emergencies.

## Emergency Facilities

The Emergency Plan shows the Fairgrounds as a major center for emergency housing. Other facilities would also be important and the Emergency Centers Map, which is part of the Safety Element, shows the major ones which could be used. Inventory of facilities is currently underway.

The County Health Department, with the main office in Ukiah, would act as the coordinator of medical services in any disaster. It also maintains a branch office in Fort Bragg and message centers in Willits and Boonville. All five hospitals in the County accept emergency patients and during any disaster would be important centers for treatment and health control measures. There are also staffed clinics in Covelo and the town of Mendocino, as well as an Indian Health Project in Ukiah. All these vital centers are shown on the Emergency Centers Map. Additionally, the location of the eight high schools are shown since these have space and facilities which could be utilized during emergencies. They would be the logical points for food distribution, information dissemination and emergency shelter.

## IDENTIFICATION OF HAZARDS AND HAZARD AREAS - EVALUATION OF RISK

### Fire

The potential for fire is highest in the brush and brushy woodland areas, and fire losses can also be high with fire in the valuable timber areas although heavy timber is not as inflammable as brush. The United States Geological Survey maps of Mendocino County show vegetative cover, and the California Department of Forestry Fire Hazard Maps identify potential fire hazard risk for all areas of the county based on weather, fuel and topography. The CDF Fire Hazard Maps are available for reference in the Planning Department office.



Most of the County is sparsely populated at the present time and the risk may be considered relatively low and acceptable. Present protective measures for the rural areas are adequate and reduce risk as much as feasible.

#### Flooding in the Inland Valleys and along Coastal Streams

The Safety Hazards Map identifies major areas of flood hazard. However, additional areas not precisely delineated on any available source, are known to be subject to periodic flooding and damage. For instance, portions of Ukiah are inundated periodically. The coastal streams also flood and potentially hazardous conditions exist along them.

In rural areas subject to sporadic or even regular flooding the risk to life is acceptably low and will continue to be so as long as flood plains are not developed with homes. Information on soil quality and crops in Anderson Valley shows that soil in the flood plain of the Navarro River is generally of lower quality than adjacent fields. This may be the result of flooding and erosion which could constitute a risk to agriculture. Additional information and research is needed before risk can be evaluated here and in similar situations. All coastal streams need more study and mapping to determine the level of existing and potential risk.

In Ukiah, the risk is at an unacceptable level now. Since the City cannot remedy the situation alone, it is also a concern of the County, and joint action will be necessary.

#### Landslides

The Geotechnical Hazard Zones Map was prepared for the Seismic Safety Element and is reprinted on page IV-20. It defines hazard potential to be expected as a result of seismic activity for various areas of the county. The Safety Hazards Map shows where slides on roads occurred during the winter of 1973-74. The potential for slides is high in much of the County since soil instability is widespread, particularly in the eastern portion of the County. Undeveloped, though unstable hill sides naturally do not constitute an actual present risk. Potential risks in this case may be classed as avoidable since safer areas are available for any needed development.

Road slides are essentially an unacceptable risk, since isolated valleys and rural settlements can be cut off by road closures. Interrupted access could escalate a minor emergency (local flooding or sickness for instance) to a major one. Thus, people living in an outlying area, although not subject to slide damage, could be endangered by a slide closing an access road. It follows that unless access can be assured, isolated areas should not be developed.

# MENDOCINO COUNTY

## Safety Element

# SAFETY HAZARDS



0 5  
MILES

**WILLIAMS & MOCINE**  
CITY & REGIONAL PLANNING  
1645 SANSOME STREET, SAN FRANCISCO, CA 94111

NOVEMBER 1974

### flooding

- 100-YEAR FLOOD (1984 flood areas)
- RIVER FORECASTING STATIONS
- sources: U.S. Army Corps of Engineers, 1985  
Water Resources Council, 1971

### slide damage

- 1974 SLIDE DAMAGE ON COUNTY ROADS
- source: Mendocino County, 1974
- major roads



## Seismically Active Areas

The Geotechnical Hazard Zones Map shows high risk areas based on available information on earthquake faults and tsunami threats. Additional study by the Corps of Engineers is being carried out and will enable the County to refine the Seismic Safety Element in the future. The San Andreas Fault is accurately drawn on parcel maps and this information is available for reference in County offices. These maps supplement the information given in this report and in the Seismic Safety Element. Information this precise is not presently available for other earthquake faults in the County.

Evidence shows that the potential for earth movement and damage is highest in the coastal area where affected by the San Andreas Fault. Since population is low in most of the area, the risk level is correspondingly low and generally acceptable. Avoiding future risk will involve detailed soil testing and special regulations for building location and structural requirements. Some areas subject to tsunamis are low risk areas now and/or constitute avoidable risk areas for the future.

## GENERAL NATURE OF NEEDED PROGRAMS AND REGULATIONS

### Land Use Planning and Regulations

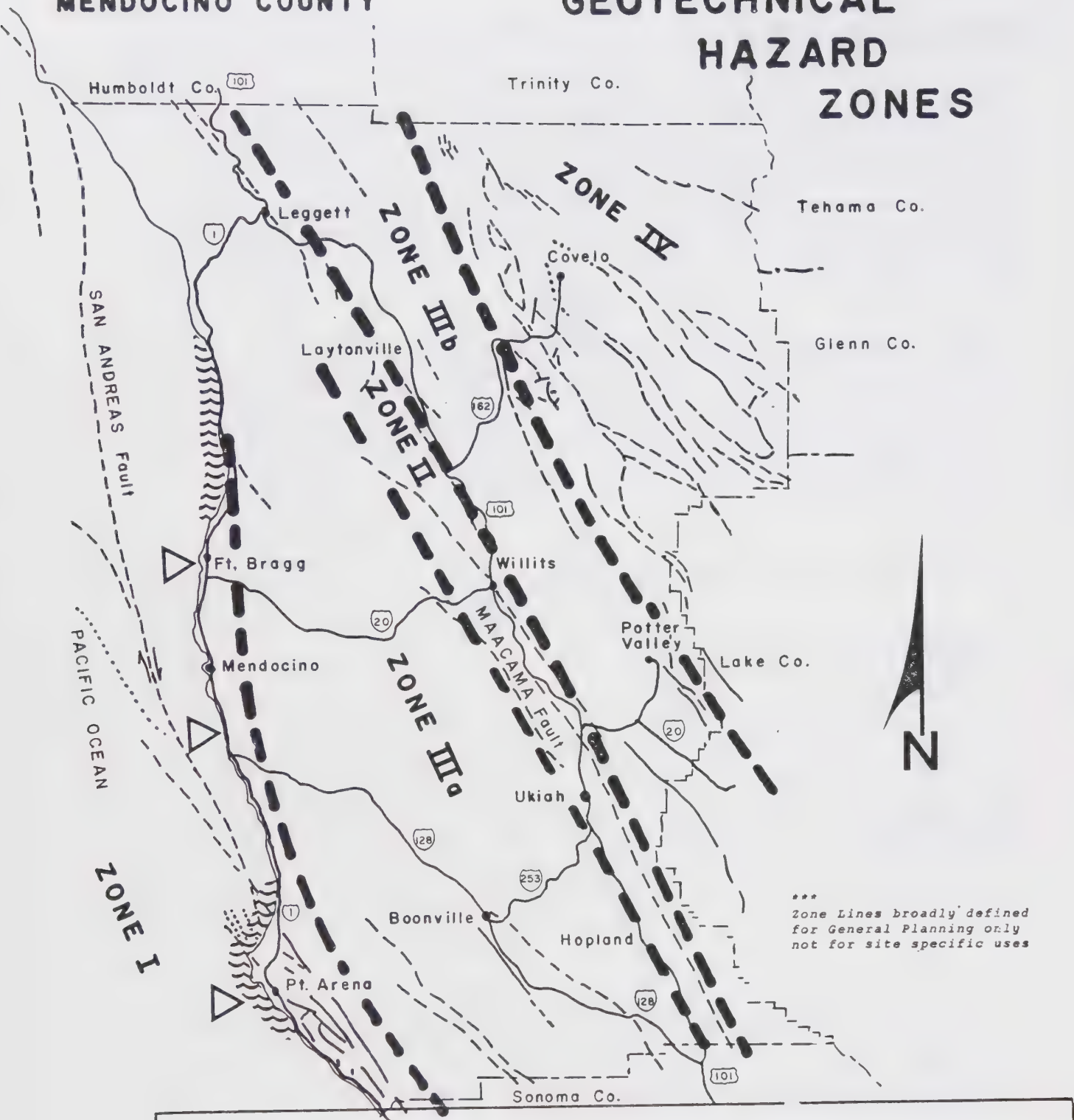
Since Mendocino County is largely rural, it has an agricultural base, some untapped agricultural potential in the inland valleys with mild climate, as well as untapped timber resources. It has certain high risk areas for urban development, but it is also subject to moderate development pressures and can absorb some increased population in the next decade. The facts point out the absolute necessity for land use policies which will protect agricultural areas and timber reserves, and which will direct growth and development to areas where life, property or resources will be least endangered. Mendocino County is fortunate that it still has opportunity to do this and to avoid development situations which would require costly corrective measures in the future.

The County is now undertaking the comprehensive revision and updating of its General Plan and the Safety and Seismic Elements make a valuable contribution to the nature of the General Plan. In terms of Safety, the general nature of land use planning decisions and regulations will be guided by the following practical considerations:

1. Urban expansion clustered around existing centers in low or acceptable risk areas is the most efficient pattern and will keep the level of risk low.

# MENDOCINO COUNTY

# GEOTECHNICAL HAZARD ZONES



\*\*\*  
Zone Lines broadly defined  
for General Planning only  
not for site specific uses

## LEGEND

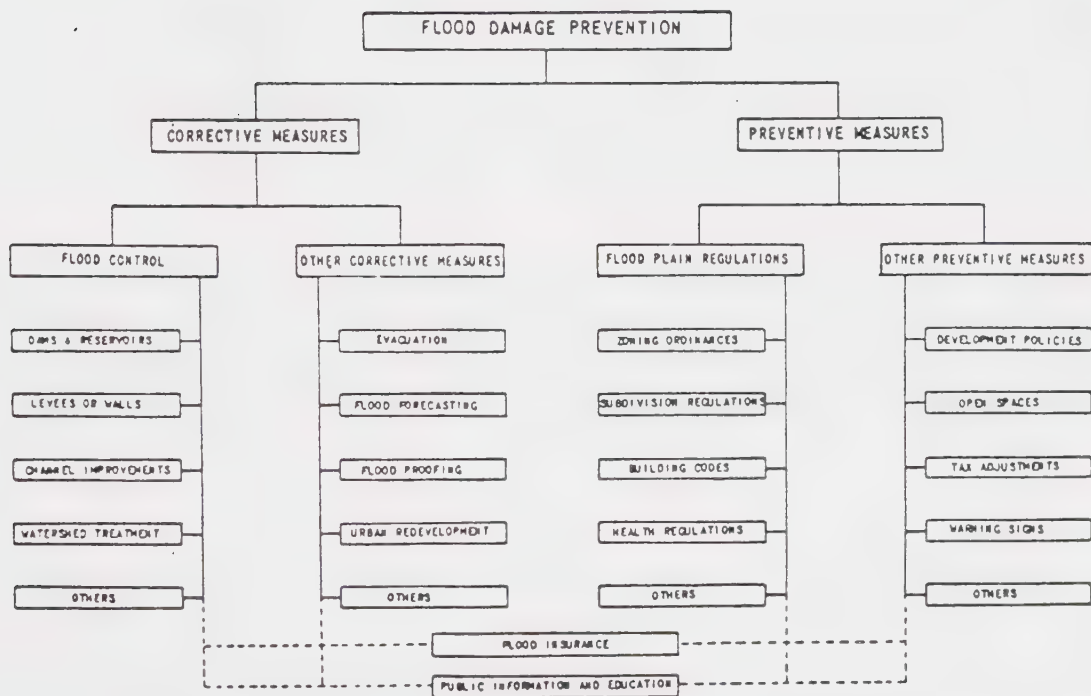
Symbol	Fault Feature	Hazard Potential	Zone I San Andreas Fault	Zone II Maacama Fault	Central Zone IIIa Coastal Belt	County Zone IIIb Eastern Belt	Zone IV Zone IV Northeast Belt
—	Known	Ground Shaking	High	H	M	M	L
- - -	Inferred	Surface Faulting	H	M	L	L	L
.....	Concealed	Landslides	Medium	H	M	H	H
- - - - -	Zone Line Approx.	Tsunami	M - H	O	L	O	O
	Tsunami Potential	Seiche	Low	L	L	L	L
△	Harbor Damage	Liquefaction	L - M	L - M	L	L	L

County Planning Dept    Scale 1"=12mi.    Date Apr 80    Source: Cal Div. Mines & CDF    drawn by jdt2

2. Residential development, should be generally precluded in areas where access cannot be assured or where other natural risks are high.
3. Since the knowledge of all high risk seismically active areas is limited, care must be exercised in granting development permits for areas of probable risk until more research is available.

### Flood Plain Studies and Regulations

A comprehensive program for reduction and avoidance of flood damage will include structural and non-structural measures. The following diagram is from the Framework Study cited earlier.



Since the passage of the Wild Rivers Act (Senate Bill 107) structural flood control projects on the Eel River are precluded until at least 1984. Non-structural measures are most important in Mendocino County generally. The diagram includes non-structural flood plain regulations and development policies as major parts of the comprehensive program. This demonstrates the close relationship between programs for flood damage protection and land use planning and the importance of the present planning program to revise and update the General Plan in coordination with the Safety Element. The first step is, of course, accurate mapping of all flood plains and potential inundation areas. Existing flood plain zoning provisions are weak and revision has been proposed as part of the new zoning ordinance. The revision defines the primary plain (the channel which must not be obstructed to permit free flow of water under flood conditions) and the secondary flood plain (area outside the channel but subject to flooding). Permitted activities and uses are different in each. In the short-and intermediate-range future, these programs and regulations are needed to reduce flood hazards in the County.

### Landslides

Mitigation of existing unacceptable hazards must be accomplished by road improvements and realignments to ensure free access to all developed parts of the County. Both Route 20 and 128, the cross county roads connecting the coast and the interior valleys with the main north-south highway (U.S. 101) are subject to slides and closure. These are the most critical routes demanding attention. Improvements of these routes will lessen the potential impact of disasters in the County.

Equally important as mitigating existing problems is avoiding future problems. Soil stability along proposed access routes must be a significant factor in land use planning and a subject of investigation in all development proposals. Finally, the development of unstable hillsides must be avoided.

### Fire

Remote areas and rugged topographical areas where access is limited or cannot be assured, heavy brush areas, and valuable timber areas all constitute potential risk areas. They are in the avoidable risk category and should be considered so for the future. Land use planning and regulation will be the most effective measures to insure that risks remain at an acceptable level.

The forest service has proposed regulation of the density of development and the protective measures needed for different conditions. These will be useful, in combination with good land use planning.



Fire protection facilities and staff are judged generally adequate and at a level which is feasible for this large, sparsely populated county. Mendocino's districts are well organized at the present time. As development continues and conditions change, consolidation will be advisable from time to time. This will allow pooling of resources and hiring of a more professional staff. In some urbanizing counties such as Santa Cruz there are old volunteer districts whose boundaries are no longer practical for present development patterns. Holding on to the old districts has been a matter of local pride and identity rather than efficiency. This should not be allowed to happen in Mendocino County; regular studies should be conducted to examine fire fighting resources and needs and consolidations should be effected when conditions warrant.

### The Emergency Plan

Mendocino County needs to undertake the preparation of a practical and comprehensive Emergency Plan devoted especially to the possible kinds of natural emergencies which could occur in various sections of the County. This is one of the most important recommendations of the Safety Element.

The State Office of Emergency Services\* indicates that the State emphasis and approach to disaster preparedness has been undated since the original Administrative Document for Mendocino County was completed in 1971. The State Office now emphasizes natural hazards and local contingency planning versus the war emphasis in the original document. Local contingency planning is getting underway at the State level and Mendocino County will be required to do local contingency planning along with other jurisdictions in the State.

Information as to existing and potential hazards contained in the Seismic Safety and Safety Elements indicate that it is essential for the County to prepare such plans. The planning concept advocated by the State Office is "mutual aid at the lowest level" with plans to send in assistance from outside agencies only if needed. Each small community is encouraged to have its own plans and to develop the capability to make an effective initial response to an emergency and to handle it locally as far as possible. This concept is particularly appropriate for Mendocino County where it is quite possible that a disaster could cut off some communities and outside help might not be available for several days. Building up the local action capability therefore is stressed in the Safety Element.

On the County-wide level, leadership and assistance from the Supervisors is needed to set up effective local programs and form emergency units based on the needed new Emergency Plan. Help will be needed to obtain and station emergency equipment in appropriate locations in the County. Personnel training will be required. Until the new Plan is prepared, the best means of implementing Readiness Condition Four as described in

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\* Information from Eric Orm of the Sacramento Office.



# MENDOCINO COUNTY

## Safety Element

# EMERGENCY FACILITIES



0 5 10  
MILES

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1045 SANSOME STREET, SAN FRANCISCO, CA 94111

NOVEMBER 1974

### □ hospitals

1. MENDOCINO COAST
2. FRANK R. HOWARD MEMORIAL
3. HILLSIDE COMMUNITY
4. MENDOCINO COMMUNITY
5. UKIAH GENERAL

### ○ clinics

1. ROUND VALLEY
2. COASTAL HEALTH SERVICE
3. MENDOCINO COUNTY INDIAN HEALTH PROJECT

### ○ high schools

1. LEGGETT
2. LAYTONVILLE
3. FORT BRAGG NORTH COAST
4. WILLETS UNION
5. MENDOCINO
6. UKIAH UNION
7. ANDERSON VALLEY
8. POINT ARENA
9. POTTER VALLEY
10. ROUND VALLEY

### ○ county health department

1. BRANCH OFFICE
2. MESSAGE CENTER
3. MAIN OFFICE
4. MESSAGE CENTER

### △ fairgrounds

1. UKIAH
2. BOONVILLE

— major roads

the current Emergency Plan needs to be determined if implementation has not yet begun. Education and dissemination of information should be emphasized. Emergency facilities in addition to those shown on the Emergency Center Map may need to be set up and all centers must be organized and equipped to handle potential emergencies.



## GOALS, POLICIES AND IMPLEMENTATION PROGRAMS

The following section of the Safety Element contains the general County goals related to safety, the policies to be followed in moving toward the general goals and specific standards and programs to be applied and carried out.

### GOALS

It is the goal of the County of Mendocino to:

1. Insure that critical structures such as dams, schools, hospitals, vital public safety facilities and emergency communication facilities remain functional throughout a fire or flood.
2. Reduce exposure of the public to existing hazardous situations where determined feasible through level of risk analysis.
3. Maintain a state of readiness adequate to cope with emergencies.
4. Reduce loss of life and property caused by flooding while protecting the integrity of the flood plain.
5. Maintain an Emergency Disaster Plan designed to reduce the risk of death, injury or loss of property due to hazardous natural conditions.

### POLICIES AND PROGRAMS

#### Existing Development - Fire

It is the policy of the County of Mendocino to:

1. Require that public structures that do not meet Uniform Building Code or Uniform Fire Code requirements for fire safety be upgraded, abated or downgraded in use, in an orderly manner. Priorities for rehabilitation or phasing out of existing unsafe structures will be based on hazard to life and level of occupancy.
2. Grant special consideration to historic or particularly aesthetic structures that might otherwise be destroyed

by enforcement of building or fire codes through change in occupancy, granting of variances, or other similar means.

3. Promote the maintenance of fire breaks, fuel breaks, green belts and emergency access routes for effective fire suppression with local fire departments and districts, the National Forest Service and the California Department of Forestry acting in concert.
4. Encourage public awareness of existing and potential fire hazards, especially home fire hazards, and of available emergency services and procedures.

To implement County policy, the following programs should be conducted:

1. The Safety Element should be reviewed every two years and updated at least every five years with new data pertaining to potential hazards resulting from fire. 1/
2. Designate a central collection agency for fire hazard studies and reports within the County.
3. Adopt standards for reports required by the County relating to fire hazards.
4. Survey older structures, especially places of public assembly within the County, for conformance with the current Uniform Building Code and the current Uniform Fire Code.
5. In a time-phased manner, systematically remove or upgrade hazardous structures, especially critical structures such as hospitals, schools and auditoriums that are within the jurisdiction of the County.
6. Develop standards and procedures for granting of variances to historic or aesthetic structures.
7. Include in any building inspection of existing structures conducted by the County inspections for faulty pilot lights, overloaded electrical circuits, unapproved or open containers

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1/ The California Department of Forestry has just completed an extensive classification of fire hazard within Mendocino County. Fire hazard was broken down into three classifications: Moderate, High and Extreme. The California Department of Forestry has mapped these hazard areas on United States Geological Survey maps, which are available for reference in the Planning Department office.



containing a combustible substance, and other fire hazards as well as inspections for conformance to the current Uniform Building Code and Uniform Fire Code. 2/

8. Request fire safety evaluations by the appropriate agency of Federal and State governmental structures not under County jurisdiction. Request Federal or State assistance to implement corrective measures as needed.
9. Identify streets, highways, railroads and utility lines that are needed to remain open as escape routes in the event of a fire, and incorporate the necessary changes to the County of Mendocino Emergency Plan if loss of or damage to these facilities is likely.
10. Set up home fire prevention programs including such projects as voluntary home inspections, distribution of information to the public on the hazards presented by fire and distribution of measures to protect life and property. Major contact points with the public such as local fire departments, Building Inspection Department and Public Works Center are logical distribution points for information.
11. Continue to define levels of existing risk associated with existing land uses.
12. Establish and/or coordinate capital improvement programs and projects aimed at eliminating high fire risk situations.
13. As future revisions are made to the county Emergency Plan, greater emphasis should be placed on contingency planning for natural disasters consistent with state civil defense policy.

## POLICIES AND PROGRAMS

### New Development - Fire

It is the policy of the County of Mendocino to:

1. Insure that adequate fire protection measures are incorporated into all new buildings of public assemblage in order to reduce the potential loss of lives and property in accordance with the current Uniform Building Code, Uniform Fire Code and/or other ordinances and standards adopted by the county to protect against such hazards.
2. Encourage the use of fire breaks, fuel breaks, green belts and emergency access routes for effective fire suppression by local

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2/ The County of Mendocino has adopted the 1976 Uniform Fire Code. The most recent Uniform Fire Code should be adopted.

fire departments and districts, the National Forest Service and the California Department of Forestry acting in concert.

3. Insure that adequate fire protection is incorporated into all new developments consistent with policy risk levels.
4. Prohibit the construction of any structure, public or private, designed for human occupancy and/or designed for emergency services or public safety in areas of unacceptable fire risk unless the only alternative sites would be so distant as to thereby jeopardize the safety of the community served. Unacceptable risk is discussed on pages 2-4 of the Safety Element.
5. Cooperate with the Department of Forestry in developing fire prevention programs for areas with high wildland fire potential. 3/
6. Consider weather, fuel and slope in determining the level of fire risk and establishing allowable building density.
7. Approve developments only if sufficient fire fighting resources including, but not limited to, stations, vehicles, personnel, equipment, hydrants and water supply will be available upon completion of the development to fight fires.
8. Require that all structures and facilities designed for public assembly have a minimum of two access routes.
9. Require at least two different ingress-egress routes for every major subdivision or parcel division in wildland areas unless necessary fire protection access and escape routes can be provided through other means.
10. Require in areas classified by the General Plan as SR or RR that provisions be made where land is subdivided by minor subdivision for eventual connection of access easements as adjacent parcels are divided.

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3/ Senate Concurrent Resolution No. 91 introduced by Senator Ayala on May 23, 1978 requests each city and county with wildland fire potential to respond to the need for a local fire prevention program by November 20, 1979. The measure also requests the Department of Forestry to make available specified information to cities and counties on fire prevention planning and programs. In accordance with this request, the Department of Forestry is in the process of finalizing Fire Safe Standards for new development. These standards, along with the newly completed fire hazard classification maps prepared by the California Department of Forestry, are available for reference in the Planning Department office.

11. Require sufficient right-of-way width in wildland subdivisions and parcel divisions for the construction of two 12-foot traffic lanes and two 8-foot roadside strips on which the vegetation should be managed to prevent fire hazard, or other ingress-egress routes may be considered. Responsibility for keeping roadside strips free of fire hazard should be assigned.
12. In minor subdivision developments, the main traffic lane width to all building sites should be at least 16 feet to allow emergency fire equipment access while occupants are escaping a wildfire. Also, turnaround access at the building site should be large enough to easily accommodate fire equipment.
13. Roadside vegetation contributing to significant fire risk should be removed for a distance of 8 feet on each side of the travelled section. In order to protect escape routes from radiant heat caused by wildfires, the native vegetation should be thinned and dead material removed on each side of roads or highways.

The clearance distances, type or amount of fuel management desired depends on local conditions, but as a minimum should extend at least 100 feet from the edge of the roadway to be beneficial as a fire defense system. Fire protection agencies can provide fuel treatment directions for planning purposes.

14. Fire flow quantities in areas served by fire hydrants should be available at 30 psi residual pressure in extreme fire hazard areas and 20 psi residual in moderate or high areas. Water source facilities should have the capacity to support the required fire flow for a minimum duration of two hours in addition to the maximum daily flow requirements for other consumptive uses.
15. Water storage may be required to assure the required minimum duration fire flow of 2 hours. Built up areas served by pumping units with nonexistent or limited gravity storage may require certain other features of reliability such as alternate power sources, duplicate pumps or additional gravity storage in case of main breaks, mechanical failure of pumping units, or loss of primary power source. The local fire authority may adjust the water quantities and duration set forth on the basis of local conditions, exposure, congestion, and construction of buildings.
16. Separately developed dwellings within high or extreme fire hazard areas as mapped by CDF with an individual private water supply should provide an acceptable guaranteed minimum supply of water, in addition to the amount required for domestic needs. The amount of water available for fire protection of structures will vary. Fire authority should be consulted to establish specific water requirements. Water storage capacity should not be less than 2,500 gallons, with



supply mains of at least 1 1/2 inch diameter, a standpipe located for fire engine filling and at least two hose outlets no less than 50 feet from the building. If the water supply is dependent on an electrical pump it should be installed with an independent electrical system.

17. Proposals for divisions of land shall provide for access by fire equipment to any existing or proposed water sources such as lakes, ponds, streams, or springs. The access must allow equipment to get within 16 feet of such water sources.
18. In wildland areas every chimney or vent attached to any solid or liquid fuel-burning device shall be provided with an approved, securely attached spark arrester consisting of 12-gauge welded or woven wire mesh screen with openings 1/2 inch across. It is to be maintained in effective working condition. Such spark arrester is to be mounted in a vertical or near vertical position and visible from the ground (Public Resources Code 4291 c. f).
19. Buildings in wildland areas should be spaced at least 60 feet apart (minimum 30-foot setback) to minimize risk of exposure to an adjacent structural fire and the conflagration potential of the spread of fire from structure to structure. The 30-foot setback will also allow compliance with Section 4291 Public Resources Code (30-foot clearance requirement).

Because close spacing is common in mobile home parks, those situated in wildland fire hazardous areas are particularly susceptible to destruction or serious damage from conflagrations. Spacing between mobile homes in such parks should be no less than that required between buildings in a similar fire hazard classification zone.

20. California Public Resources Code (PRC) Section 4291 requires certain minimum clearances and states as follows: "Any person who owns, leases, controls, operates, or maintains any building or structure in, upon, or adjoining any mountainous area or forest-, brush-, or grass-covered lands or land covered with flammable material shall at all times do all of the following:
  - a. Maintain around and adjacent to such building or structure a firebreak made by removing and clearing away, for a distance of not less than 30 feet on each side thereof or to the property line, whichever is nearer, all flammable vegetation or other combustible growth. This subsection does not apply to single specimens of trees, ornamental shrubbery, or other plants which are used as ground cover, provided that they do not form a means of rapidly transmitting fire from the native growth to any building or structure.
  - b. Maintain around and adjacent to any such building or structure additional fire protection or firebreak made by removing all brush, flammable vegetation, or combustible growth which is located 30 feet to 100 feet

from such building or structure or to the property line, whichever is nearer, as may be required by the Director of Forestry when he finds that because of extra hazardous conditions, a firebreak of only 30 feet around such building or structure is not sufficient to provide reasonable fire safety. Grass and other vegetation located more than 30 feet from such building or structure and less than 18 inches in height above the ground may be maintained where necessary to stabilize the soil and prevent erosion.

- c. Remove that portion of any tree which extends within 10 feet of the outlet of any chimney or stovepipe.
  - d. Remove dead or dying wood from any tree adjacent to or overhanging any building.
  - e. Remove leaves, needles, or other dead vegetative growth from the roof of any structure.
21. Require that all tentative maps show locations and widths of required firebreaks, fuelbreaks or greenbelts and that they indicate easements to be provided for firebreaks and for fire equipment access.

Fuelbreaks and greenbelts will be located to protect both developing areas and adjacent wildlands. The most advantageous location and design must be determined separately for each case, in consideration to fuels, topography, weather, exposures, and other constructed or planned improvements.

Fuelbreaks and greenbelts should be coordinated with water systems, fire roads, and other routes of access and shall provide maximum traffic circulation to meet fire protection needs consistent with topography. Access to a publicly maintained road adequate for fire, flood or other emergencies should be provided at intervals of not more than one-half mile.

To implement County policy, the following measures and programs should be taken or conducted.

- 1. Adopt most current Uniform Building Code and Uniform Fire Code.
- 2. Continue to define levels of potential fire risk associated with various potential land uses.
- 3. Adopt and implement evacuation plans for areas of potential fire hazard.
- 4. Abide by State Fire Safe Guidelines.



5. The County shall continue to review the boundaries and fire fighting resources of each fire protection district within the County and determine their capacity to adequately serve existing and potential development.
6. In conjunction with the County Fire Chief's Association and the California Department of Forestry, the County shall include within the County's Emergency Plan a system of potential evacuation routes necessary to provide safe evacuation of residents during a fire.

#### POLICIES AND PROGRAM

##### Existing Development - Flood

It is the policy of the County of Mendocino to:

1. Promote the improvement of natural drainageways and recharge areas in urbanized areas in such a manner as to be compatible with the environmental, recreational or open space needs of abutting areas.
2. Achieve flood damage prevention through non-structural means.
3. Encourage public awareness of potential flood hazards and available emergency services and procedures

To implement County policy, the following programs should be conducted:

1. The Safety Element should be reviewed every two years and updated every five years with new data pertaining to potential hazards resulting from flooding. 4/
2. Designate a central collection agency for flood hazard studies and reports within the County.

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4/ Presently, the Army Corps of Engineers' high water marks for the 1964 flood are being used to define flood plain zones, unless more accurate zones have been defined by further study and investigation. Additional information and research is needed before risk can be evaluated in many areas of the County. These areas have been identified in the proposed Flood Insurance Study to be conducted by the Federal Insurance Administration under the National Flood Insurance Program. An engineering firm has yet to be selected to perform this study. The current HUD Flood Hazard Boundary maps prepared by the Flood Insurance Administration are also used in the planning process. These maps show sufficient detail to identify individual lots and do not necessarily show high marks but areas of potential flood hazard.

3. Adopt standards for reports required by the County relating to flood hazards.
4. Continue to define levels of flood risk associated with various land uses.
5. Identify streets, highways, railroads and utility lines that are needed to remain open in the event of a flood and incorporate the necessary changes to the County of Mendocino Emergency Plan if loss or damage to these facilities is likely, including areas subject to inundation due to dam failure.
6. Distribute information to the public on the hazards presented by flooding and on methods to protect lives and property. Major contact points with the public such as the Planning Department and the Public Works Center are logical distribution points for information.
7. Establish and/or coordinate capital improvement programs and projects aimed at eliminating existing higher flood risk situations. This would include the National Flood Insurance Program.

## POLICIES AND PROGRAMS

### New Development - Flood

It is the policy of the County of Mendocino to:

1. Promote compatible uses of areas designated as flood plains (i.e., agricultural, conservation, open space or recreation).
2. Promote the preservation of natural drainage ways and recharge areas in urbanizing areas in such a manner which is compatible with the environmental, recreational or open space needs of abutting areas.
3. Prohibit the construction of any structure, public or private, designed for human occupancy and/or designed for emergency services or public safety in areas of unacceptable flood risk, unless the only alternative sites would be so distant as to thereby jeopardize the safety of the community served. Unacceptable risk is discussed on Page 2 through 4 of the Draft Safety Element.
4. Require that new residential development proposals consider potential inundation from dam failure.

To implement County policy, the following programs should be conducted:

1. Develop standards for the degree of flood protection that

would be economically feasible for various types of land uses. 5/

2. Require all tentative maps to show locations of areas subject to flood inundation. 6/
3. Continue comprehensive flood damage prevention planning by considering flood control works, 7/ flood proofing, flood forecasting, flood plain zoning, 8/ subdivision regulations, building codes and policies, and research studies and engineering mitigations directed toward flood damage reduction.
4. Continue to define levels of potential flood risk which are consistent with various land uses.
5. Adopt and implement evacuation plans for areas of potential flood inundation.

## POLICIES AND PROGRAMS

### Seismic Safety

In conformance with Government Code Section 65302(f), a Seismic Safety Element of the General Plan has been prepared. The protection of the community against geologic hazards, as required by Government Code Section 65302(i), is included in the Seismic Safety Element.

The geologic and seismic planning policies relating to existing and new development contained in the Seismic Safety Element are considered a part of the County's Safety Element.

- 
- 5/ A Comprehensive Framework Study on Flood Control has been developed by the Water Resources Council, an interagency committee reporting to the Governor and to Congress. This study recommends a minimum protection from a once-in-10-year flood for agricultural areas and a minimum protection from once-in-100-year flood for urban areas.
  - 6/ Section 17-41(B)(16) of the County of Mendocino Division of Land Regulations (Chapter 17 of the Mendocino County Code) meets this requirement. Recent State legislation also requires the mapping of all potential inundation areas downstream of all dams above a given height or storage capacity.
  - 7/ Senate Bill 107, the Wild Rivers Act precludes structural flood control projects for certain areas.
  - 8/ Existing flood plain zoning is considered weak, and revision has been proposed as part of the new zoning ordinance.

## APPENDIX

The following documents are incorporated into the Safety Element by reference:

1. Uniform Building Code, latest edition.
2. Uniform Fire Code, latest edition.
3. United States Geological Survey Maps prepared by the California Department of Forestry classifying the degree of fire hazard within the County (February 1979).
4. Fire Safety Standards for new development as prepared by the California Department of Forestry for Mendocino County in response to Senate Concurrent Resolution No. 91 (1978).
5. Army Corps of Engineers' December 1964 Flood Plain and High Water Marks, Russian River Basin, California, Report on Flood of December 1964, File No. 61-53-8.
6. HUD Flood Hazard Boundary Maps, latest revisions.





# V. SEISMIC



MENDOCINO COUNTY GENERAL PLAN

SEISMIC SAFETY ELEMENT

ADOPTED BY

MENDOCINO COUNTY BOARD OF SUPERVISORS

MARCH 12, 1975

REVISED:

SEPTEMBER 24, 1981

MARCH 14, 1983

NOVEMBER 26, 1984

DECEMBER 9, 1991

Mendocino County Department of Planning and Building Services  
Office: 589 Low Gap Road  
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SUMMARY OF FACTS RELEVANT TO POLICIES AND STANDARDS  
FOR THE  
SEISMIC ELEMENT TO THE MENDOCINO COUNTY GENERAL PLAN

Mendocino County is one of the more geologically and seismically active portions of the State of California. The San Andreas Fault, capable of an estimated Magnitude 8.3 earthquake, poses the most serious hazard, not only from fault rupture along its trace but from severe ground shaking throughout many portions of the County. The recently discovered Maacama Fault may pose a hazard to Mendocino County as serious as the San Andreas Fault because it is in the Ukiah-Willits population corridor. Estimates of the Maacama Fault's capability range from a low of 6.5 to a high of 8.1 Magnitude.

Rocks of the Franciscan Assemblage underlie more than 90% of the County. Due to the long tectonic history which has fractured, sheared and deformed these rocks, they are often unstable when hillside slopes are 20% or more. Consequently, landslides are frequent throughout many of the County's hillsides.

Coastal areas are susceptible to geologic and seismic hazards not found in inland areas. Bluff erosion results from the undercutting of sea cliffs by ocean waves. Seismically-induced water waves, known as tsunamis, may be generated thousands of miles away and gain sufficient height, when they reach the Mendocino coast, to inundate low lying coastal areas. Tsunamis of heights exceeding 100 feet have been reported along coasts of the Pacific Ocean.

The coastal region between Gualala and Point Arena is an area with a combination of the most serious geologic hazards in Mendocino County. Not only are the coastal problems of bluff erosion and tsunami inundation present, but the San Andreas Fault is here. Above the coastal terrace the steep hillside displays numerous active and dormant landslides. In the area of Manchester, all these problems occur together with the addition of liquefaction potential, which can result in foundation failure.

The spectacular consequences of a major earthquake or tsunami occupy the major portion of the public's attention regarding geologic and seismic hazards. However, slope instability problems in Mendocino County affect a much larger portion of the County than well-known fault traces and coastal hazards. The problem of existing or induced landslides has the potential for creating hazards and loss of property to the individual that are as severe as a major earthquake.

Despite the geologic and seismic problems, safe development sites and structures can be created with minimal risk throughout much of the County. However, because the identification of geologic and seismic risks is often less than obvious, it is necessary to use competent professionals in identifying and evaluating the risks.

Existing regulations, if properly implemented, will mitigate some potential seismic and geologic hazards. Other County standards and policies are presented to further mitigate potential hazards. Facts that should be considered relative to these policies and standards are presented below.

In respect to:

#### Geologic and Seismic Reports

1. The Business and Professions Code as well as the Government Code requires that only registered geologists and geophysicists prepare reports containing interpretation of geologic and seismic features. Licensed professional engineers specializing in soils may prepare reports on soil foundation conditions.
2. The Division of Land Regulations, Chapter 17 of the Mendocino County Code in its present form, could be interpreted as to allow the preparation of geologic hazards reports by persons other than certified engineering geologists. A proposal to prevent this potential conflict with the Business and Professions Code is given as a suggested amendment to existing County ordinance.
3. Detailed geologic mapping is generally lacking for Mendocino County. Therefore, it will be frequently necessary to rely upon licensed professionals to identify and determine the significance of site specific geologic and seismic risks.

#### Surface Faulting

1. The Maacama Fault has been mapped between Hopland and Laytonville along a trend similar to Highway 101. Existing evidence indicates that recent surface movement is occurring, or has occurred, in Willits and between Talmage and the Forks east of Ukiah. Consequently, portions of the Maacama Fault may be active. The capability of this fault in generating an earthquake is differently estimated by current investigators because its total length and exact nature are yet unknown. Despite the uncertainties concerning the Maacama Fault, it should be treated as a fault of major significance to Mendocino County. Earthquakes in the Willits-Ukiah area in November, 1977 through April, 1978 may have been related to the Maacama Fault. On the strength of existing information, officials at the California Division of Mines and Geology anticipate that Special Studies Zones, as defined by the Alquist-Priolo Act, will be established along segments of the Maacama Fault by 1982.
2. There are numerous inactive faults throughout the Franciscan Assemblage rocks. Except for the weakened nature of rocks along these inactive fault traces, inactive faults typically present no particular geologic or seismic hazards.

## Ground Shaking

1. Ground shaking is responsible for about 99% of the damage caused by an earthquake.
2. Falling objects caused by ground shaking are the major cause of earthquake-related deaths and injuries.
3. Data from past earthquakes has shown that the intensity of ground shaking can be several times higher at sites underlain by valley alluvium rather than firm bedrock. Consequently, the valleys along the trace of the Maacama Fault, especially in the Ukiah-Willits corridor, deserve special attention.
4. The northeastern portion of the County which is the greatest distance from the San Andreas Fault and other known potentially active faults is expected to receive the least amount of ground shaking from future earthquakes.
5. Although structures cannot be designed safely to withstand fault rupture, most non-critical as well as many critical structures can be engineered to safely withstand ground shaking. It is essential for an engineering design to use an accurate estimate of the anticipated acceleration caused by a maximum credible earthquake. Estimates of ground shaking are provided by geologic-seismic investigations.

## Ground Failure

1. Types of ground failure induced by earthquakes include landsliding, liquefaction, and differential settlement. Each of these is intensified by the presence of saturated soils.
2. Liquefaction occurs when the strength of saturated, loose, granular material is dramatically reduced by earthquake shaking and the once stable granular material is transformed into a fluid-like state similar to quicksand. As a result of liquefaction landslides up to a mile in length have resulted on slopes of only 2-1/2 percent and the foundations of buildings have sunk, causing them to overturn.
3. Landslides are extremely common in the hills of Mendocino County. Some were undoubtedly caused by earthquakes but most are caused by water saturating the steep unstable slopes of the Franciscan Assemblage.
4. Active landslides are generally easy to identify but dormant landslides are subtle and usually require a trained person to identify them. Dormant landslides may be reactivated by grading or construction activities.



5. The vast majority of landslides in Mendocino County are unmapped. Those landslides that are mapped are usually obvious and relatively large. Landslides should be considered a factor in any hillside grading or development where slopes are 20% or greater.
6. Whether differential movement beneath a foundation is caused by a landslide or a fault, the result can be structural failure. Therefore, the placement of structures on a landslide can result in injury and property losses that may be as severe to the individual as placement of a structure upon an active fault. Small landslides in some respects are more hazardous than very large landslides because they are more easily disrupted by grading and construction activities. Consequently, a landslide does not have to be mapped to be of sufficient size to create a hazard.
7. If not properly conducted, grading in landslide terrain can cause damage to adjacent existing structures and facilities with the minimum result of increased erosion and stream sedimentation. The Eel River has the highest average annual suspended sediment yield per square mile of drainage area of any river of its size or larger in the United States ... 15 times higher than the Mississippi River and 4 times higher than the Colorado River. Landslides are estimated to account for 30% of the total sediment yield.

#### Tsunami

1. Tsunami (Japanese for harbor, "tsu", and wave, "nami") have caused major damage to Mendocino County's harbors and coastline in the past.
2. A tsunami height of 23 feet occurring once every 100 years has been predicted for the Mendocino coast.



## INTRODUCTION AND LEGAL REQUIREMENTS FOR ELEMENT

In February 1971, the San Fernando Valley in Los Angeles County was shaken by violent earthquake tremors, and major damage was done to public buildings and freeway structures as well as private buildings. Serious damage done to a reservoir dam above the valley necessitated evacuation of thousands of families until the reservoir could be drained and threat of further devastation by flooding was removed. An aftermath of this disaster was the passage of Section 65302(f) of the California Government Code which requires each city and county to prepare a Seismic Safety Element for its general plan.

The basic intent of the element as required by the law is to reduce loss of life, injury, damage to property and economic and social dislocation from future earthquakes. This requires identification of those areas subject to seismic hazards such as surface rupture from fault movement, ground shaking, ground failures and seismically induced water waves. Finally, an evaluation of risk equated with acceptable land uses and regulations for risk areas must be made.

Several guidelines for preparation of Seismic Safety Elements have been established and this report has made use of them. These include Suggested Earthquake Guidelines for the Seismic Safety Element of the General Plan, Governor's Earthquake Council, 1972; Draft Guidelines for Local General Plans, Council for Intergovernmental Relations, 1973; Geology and Earthquake Hazards: Planners' Guide to the Seismic Safety Element, Association of Engineering Geologists, 1973; Guidelines for Developing a Seismic Safety Element, ASPO, 1974. Additionally, the findings and recommendations of this report are directly related to the Safety Element and the Open Space/Conservation Element of the Mendocino County General Plan. It also relates to the policies established by the citizens of the county and listed below. In a more general sense, the Seismic Safety Element is also related to the Land Use and Housing Elements of the County Plan. The Guidelines developed by the Council on Intergovernmental Relationships advises that ... "Communities with extensive open areas and areas subject to urbanization may wish to focus on natural seismic hazards and the formulation of land use policies and development regulations to insure that new development is not hazardous." This is most appropriate for Mendocino County and this report does focus in that direction rather than on "structural hazard and disaster planning" which is recommended for fully developed urban communities.

### Policy Statement, Mendocino County Citizens' Committee

1. Residents of Mendocino County are aware of the threats of earthquakes and other natural hazards. The size of the county with its vast forested areas, steep hill and valley terrain and heavy rainfall make it necessary to identify the potential hazards associated with each area.
2. Geologically hazardous areas need to be mapped and made a matter of public record available to sellers, buyers and users of land and

structures. Detailed geologic and seismic hazard studies of any particular site must be made a part of any land development plan.

3. Where man-made or naturally hazardous areas (steep hillsides, fault zones, and areas of unstable soil) have been identified, special building standards and soil engineering requirements should be established and enforced to reduce future risks.
4. The emergency disaster plan must be implemented to maintain order, and provide for the needs of displaced, injured and isolated persons and to insure supplies of food and water should normal channels of distribution be severed or sources contaminated in a future disaster. The plan must include both necessary public agency actions and instructions for private action in time of disaster.

## GENERAL CONSIDERATIONS OF EARTHQUAKE HAZARDS

### Statewide Considerations

California is called earthquake country. It is located on what is known as the Pacific "ring of fire," the volcanic belt which roughly coincides with a line drawn around the edge of the Pacific Ocean (the circum-Pacific seismic belt). Eighty percent of the world's earthquakes occur along this belt. Other areas situated along this belt, such as Japan and the Aleutian Islands, have frequent earthquakes but, for the last 60 years, California has experienced a potentially destructive earthquake on the average of one every two years, according to the California Division of Mines and Geology.

Earthquakes are caused by movement of crustal material as the rocks of the earth adjust to tectonic forces. Recent geological data gathered from investigation of the world's ocean floors indicate that the surface of the earth is composed of a number of more or less rigid plates. These plates are "floating" on a "plastic" zone of molten rock material. The frequency of earthquakes is highest where two plates are being pushed against each other or where one plate is overriding another. The stresses built up in the rocks as the plates are pushed into each other are released when the strength of the rock is exceeded, resulting in an earthquake. Faults are usually manifested on the surface as zones of sheared and dislocated rock.

The American Plate includes both North and South America and extends from the Mid-Atlantic ridge to the western coast of the continents. The San Andreas Fault is a part of the western boundary of the American Plate, according to some geologists. The crustal material west of the San Andreas Fault is part of the Pacific Plate which is moving northwest.

Earthquakes cause various geological processes that can cause severe damage to structures and danger to people. The Alquist-Priolo Special Studies Zones Act requires that the California Division of Mines and Geology prepare Special Study Zone maps which delineate all potentially and recently active faults which constitute potential hazards to structures.

Faults crisscross the surface of the earth. Most have not moved for hundreds of thousands or even millions of years and are considered inactive. Others show evidence of historic activity or have moved in the recent geologic past; these are considered active faults. A fault may be from several feet to several hundred miles long. Displacement occurs when the earth on one side of a fault moves in relationship to the earth on the other side.

Seismic hazards involved are not limited to the fault trace where the surface evidence of movement can be viewed. The hazards can be grouped into four main categories: ground shaking, surface faulting, ground failure, and seismically induced water waves. Each of these natural phenomena is examined briefly in the following paragraphs.

Earthquake magnitude is measured at the point on the earth's surface directly above the point of origin of the earthquake. This point is called the epicenter. The Richter Scale is at present the most common measure

of Magnitude. The Modified Mercalli Scale describes earthquake intensity. The two scales are compared below, as both are referenced by this report.

TABLE 1.  
COMPARISON OF MAGNITUDE AND INTENSITY

<u>Richter Magnitude</u>	<u>Modified Mercalli Intensity</u>	
2	I-II	Usually detected only by instruments
3	III	Felt indoors
4	IV-V	Felt by most people, slight damage
5	VI-VII	Felt by all; many frightened and run outdoors; damage minor to moderate
6	VII-VIII	Everybody runs outdoors; damage moderate to major
7	IX-X	Major damage
8+	X-XII	Total and major damages

A potentially active fault is defined as any fault which has been active during Quaternary time (last 2,000,000 years). An exception is made when a Quaternary fault has been determined from direct evidence to have been inactive before Holocene time (last 11,000 years). The average interval between potentially damaging earthquakes (Magnitude 6.5 or greater on the Richter Scale) is not predictable within definite limits.

#### Ground Shaking

Earth tremors and shaking are felt far beyond the actual area of faulting and cause the greatest damage from an earthquake. With continuation of present locational and building practices, the Division of Mines and Geology has estimated that damage in California from ground shaking could be 21 billion dollars between 1970 and 2000. Ground shaking may be accompanied by minor earth movements. If differential movement across a foundation exceeds an inch, the combined effects of shaking and movement on a structure can be catastrophic. The extent of damage will depend somewhat on design and construction. Problems can arise from any one or a combination of the following:

1. Failure of structure due to shaking.
2. Foundation failure due to soil bearing failure, including liquefaction.
3. Differential settlement of structure due to soil compaction.



## Surface Faulting (Fault Rupture)

While considerable attention is given to locating surface faults (because this is visible evidence of their existence and invaluable in many respects) it is important to note that less than one percent of earthquake damage is caused by surface faulting, according to the California Division of Mines and Geology. Faults must be identified because a structure built over a fault trace will be ruptured if earth movement occurs.

## Ground Failure

Earthquakes and landslides are the most common hazards in California and landslides may be induced by seismic activity. The greatest chance of ground failure or slope failure is near the epicenter of an earthquake and will depend additionally on the state and kind of rock materials. (Morton and Streitz, 1967). Water absorption, quality of the soil, cleavage and orientation of rocks are factors. Liquefaction occurs when sufficiently strong ground shaking shakes saturated, granular unconsolidated material. Failure on slopes of 1% to 2% has occurred. Figures 1 and 2 illustrate some of the most common types of ground or slope failure.

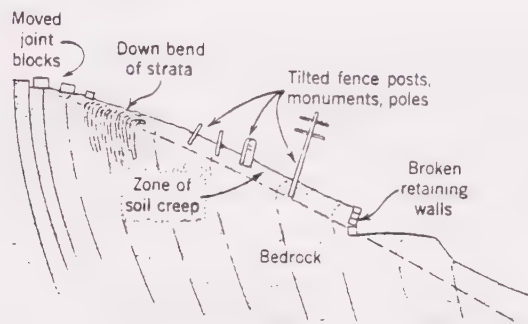


Figure 1. - Soil creep, a slow downhill creep of soil and weathered overburden.

## Seismically Induced Water Waves (Tsunamis and Seiches)

Tsunamis (often miscalled tidal waves) are ocean waves generated by earthquakes, by large submarine landslides, or by volcanic eruptions. Tsunamis affect only coastal areas and streams emptying into the ocean. In the deep ocean the wave length from crest to crest may be hundreds of miles long although the wave height from trough to crest may be only a few feet. A Tsunami cannot be seen from the air or felt aboard ship in deep water. As a tsunami enters the sloping region of the continental shelf and its shallow water, the wave length diminishes and wave height greatly increases. Waves reaching heights of more than 100 feet have been reported. The northern California coast was struck by a severe



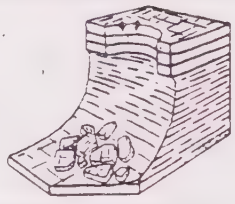
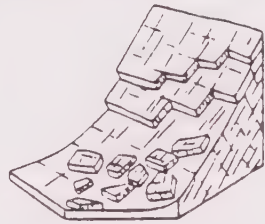
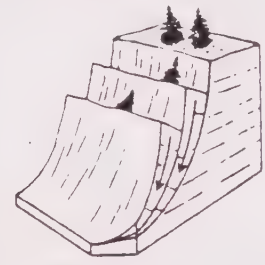
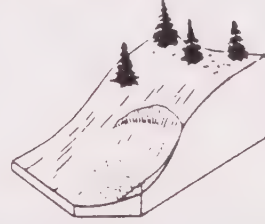

Process	Definition and Characteristics	Illustration
<b>Rockfall and debris fall</b>	<i>The rapid descent of a rock mass, vertically from a cliff or by leaps down a slope. The chief means by which taluses are maintained.</i>	
<b>Rockslide and debris slide</b>	<i>The rapid, sliding descent of a rock mass down a slope. Commonly forms heaps and confused, irregular masses of rubble</i>	
<b>Slump</b>	<i>The downward slipping of a coherent body of rock or regolith along a curved surface of rupture. The original surface of the slumped mass, and any flat-lying planes in it, become rotated as they slide downward. The movement creates a scarp facing downslope.</i>	
<b>Debris flow</b>	<i>The rapid downslope plastic flow of a mass of debris. Commonly forms an apronlike or tonguelike area, with a very irregular surface. In some cases begins with slump at head, and develops concentric ridges and transverse furrows in surface of the tonguelike part.</i>	
<b>Variety: Mudflow</b>	<i>A debris flow in which the consistency of the substance is that of mud; generally contains a large proportion of fine particles, and a large amount of water</i>	

Figure 2. - Processes involved in some kinds of slope failure or mass-wasting.

tsunami after the Alaskan earthquake of 1964. This was the most destruction reported in 100 years. Damage at Albion River was reported at half a million dollars and at Noyo River, one million. Total damage in California was over thirteen million dollars and thirteen lives were lost.

Seiches are water waves induced by earth movement occurring within enclosed lakes, reservoirs, bays and rivers. They generally have an amplitude of one foot or less but in shallow areas or where the water is constricted, waves as great as 20 or 30 feet can occur (McCulloch, 1966).

The process of assessing the hazards from tsunamis and seiches is difficult and imprecise at this time. However, there is a potential for catastrophic occurrence where the phenomenon has occurred in the past.

### Structural Safety in Earthquake Risk Areas

Table 2 equates risk with certain types of buildings and indicates added costs to reduce risk to acceptable levels. It shows that certain types of buildings may be very much more costly in high risk areas than in safe or minimum risk areas. Although the information is very general, it is a useful guide and demonstrates the need for considering the seismic safety factors in land use planning.

The California Council on Intergovernmental Relations in their "General Plan Guidelines, September 1973", has defined the following terms.

"Acceptable Risk: The level of risk below which no specific action by local government is deemed to be necessary."

"Unacceptable Risk: Level of risk above which specific action by government is deemed to be necessary to protect life and property."

"Avoidable Risk: Risk not necessary to take because individual or public goals can be achieved at the same or less total 'cost' by other means without taking the risk."

The Joint Committee on Seismic Safety of the California Legislature has recommended a scale of acceptable risk. This scale is presented in Table 2.

TABLE 2. A SCALE OF ACCEPTABLE RISKS

Importance Factor	Level of Acceptable Risk	Kinds of Structures	Extra Project Cost Probably Required to Reduce Risk to an Acceptable Level
1	Extremely low <sup>1</sup>	Structures whose continued functioning is critical, or whose failure might be catastrophic: nuclear reactors, large dams, power intertie systems, plants manufacturing or storing explosives or toxic materials.	No set percentage (whatever is required for maximum attainable safety)
2	Slightly higher than under level 1 <sup>1</sup>	Structures whose use is critically needed after a disaster: important utility centers; hospitals, fire, police, and emergency communication facilities; fire stations; and certain bridges and overpasses that are part of a critical transportation element; also smaller dams.	5 to 25 percent of project cost <sup>2</sup> .
3	Lowest possible risk to occupants of the structures <sup>3</sup>	Structures of high occupancy, or whose use after a disaster would be particularly convenient: schools, churches, theaters, large hotels, and other high-rise buildings housing large numbers of people, other places normally attracting large concentrations of people, civic buildings, secondary utility structures, extremely large commercial enterprises, most roads, alternative or noncritical bridges and overpasses.	5 to 15 percent <sup>4</sup> of project cost <sup>4</sup> .
4	An "ordinary" level of risk to the structures	The vast majority of structures: most commercial and industrial buildings, small hotels and apartment buildings, and single-family residences	1 to 2 percent of project cost, in most cases (2 to 10 percent of project cost in a minority of cases) <sup>5</sup> .

(Footnotes are on next page)

Source: Meeting the Earthquake Challenge, Final Report to the Legislature, State of California, by the Joint Committee on Seismic Safety, January 1974. Part One: A Comprehensive Approach to Seismic Safety, p. 9.

- 
1. Failure of a single structure may affect substantial population.
  2. These additional percentages are based on the assumption that the base cost is the total cost of the building or other facility when ready for occupancy. In addition, it is assumed that the structure would have been designed and built in accordance with current codes. Moreover, the estimated additional cost presumes that structures in this acceptable-risk category are to embody sufficient safety to remain functional following an earthquake.
  3. Failure of a single structure would affect primarily only the occupants.
  4. These additional percentages are based on the assumption that the base cost is the total cost of the building or facility when ready for occupancy. In addition, it is assumed that the structures would have been designed and built in accordance with current, correct, and applicable codes. Moreover, the estimated additional cost presumes that structures in this acceptable-risk category are to be sufficiently safe to give reasonable assurance of preventing injury or loss of life during an earthquake, but otherwise not necessarily to remain functional.
  5. "Ordinary risk": Resist minor earthquakes without damage; resist moderate earthquakes without structural damage, but with some non-structural damage; resist major earthquakes of the intensity or severity of the strongest experienced in California, without collapse, but with some structural as well as non-structural damage. In most structures, it is expected that structural damage, even in a major earthquake, could be limited to repairable damage. (Structural Engineers Association of California)





## CHARACTERISTICS OF MENDOCINO COUNTY

### Geological Background

Mendocino County may be divided into two main geological units:

1. The coastal belt of Cretaceous and Early Tertiary age, and
2. The eastern belt of Jurassic and Cretaceous age.

Some geologists group these units into the Franciscan Assemblage.

The Franciscan Assemblage is composed of marine sedimentary rocks, metamorphosed volcanic rocks, serpentinite, and high grade metamorphic rocks known as eclogite.

Coastal belt rocks are somewhat younger than eastern belt rocks. There is also a difference in the mineral composition of the rocks which can be seen in the differences in appearance of the weathered rocks. Weathered coastal rock is light, yellowish-brown while eastern belt rock is a dull earthy brown.

Rocks of both belts are, with few exceptions, highly folded, faulted and fractured. There are zones up to a few miles wide and several miles long composed primarily of highly crushed rock formed as a result of tectonic stresses of the earth. These zones are referred to as melange and are landslide prone. This is a characteristic of the eastern belt.

There are occasional isolated areas of alluvial deposits found throughout the county. Little Lake Valley, parts of the Ukiah Valley, Potter Valley, parts of Hopland, parts of Anderson Valley, Eden Valley, Round Valley and Laytonville are alluvial areas. These deposits are non-marine, poorly consolidated sands, silts, clays and gravels of Plio-Pleistocene Age.

Geologic rock types are rated as to landslide potential on the Geotechnical Hazard Zones Map. Generally the eastern belt is most prone to landsliding, although the valley floors are relatively stable. The description above is very general and no conclusions concerning small areas of the county or individual sites can be made. The fact that rocks of both geographical areas of the county are generally "folded, faulted and fractured" and there are significant zones of landslide-prone melange, points out the need for soil testing and geological field investigation wherever large scale or important development is proposed. Access to a site as well as the safety of the site itself must be considered.

### Geotechnical Hazard Zones

Mendocino County may be divided into four areas which have similar bedrock and soil characteristics, ground rupture potential, ground stability and flooding characteristics. These areas of similar geotechnical characteristics are called "Geotechnical Hazard Zones."

The boundaries of the Geotechnical Hazard Zones are a matter of judgment and cannot be precisely drawn. Each zone and related hazards are described separately in the following sections:

#### Hazard Zones

Zone I	San Andreas Fault Zone
Zone II	Maacama Fault Zone
Zone IIIa	Central County Zone - Coastal Belt
Zone IIIb	Central County Zone - Eastern Belt
Zone IV	North East County Zone

#### Zone I - The San Andreas Fault Zone. Description of Major Fault and Hazards

This zone is subject to all four types of seismic hazard: ground shaking, surface faulting, ground failure and seismically induced water waves. Conditions and hazards in Zone I are described and except for the section on water waves, much of the material applies to all parts of the county. The other zones are therefore described but information included in Zone I section is not repeated.

Faulting -- In 1906 the earthquake which devastated San Francisco was felt and registered as far north as Point Delgada just north of the Mendocino County line. At Fort Bragg, most brick buildings were destroyed and many frame buildings were shifted off their foundations.

C.R. Johnson, founder of the town of Fort Bragg and of the Union Lumber Company, was quoted in The Noyo Chief as follows:

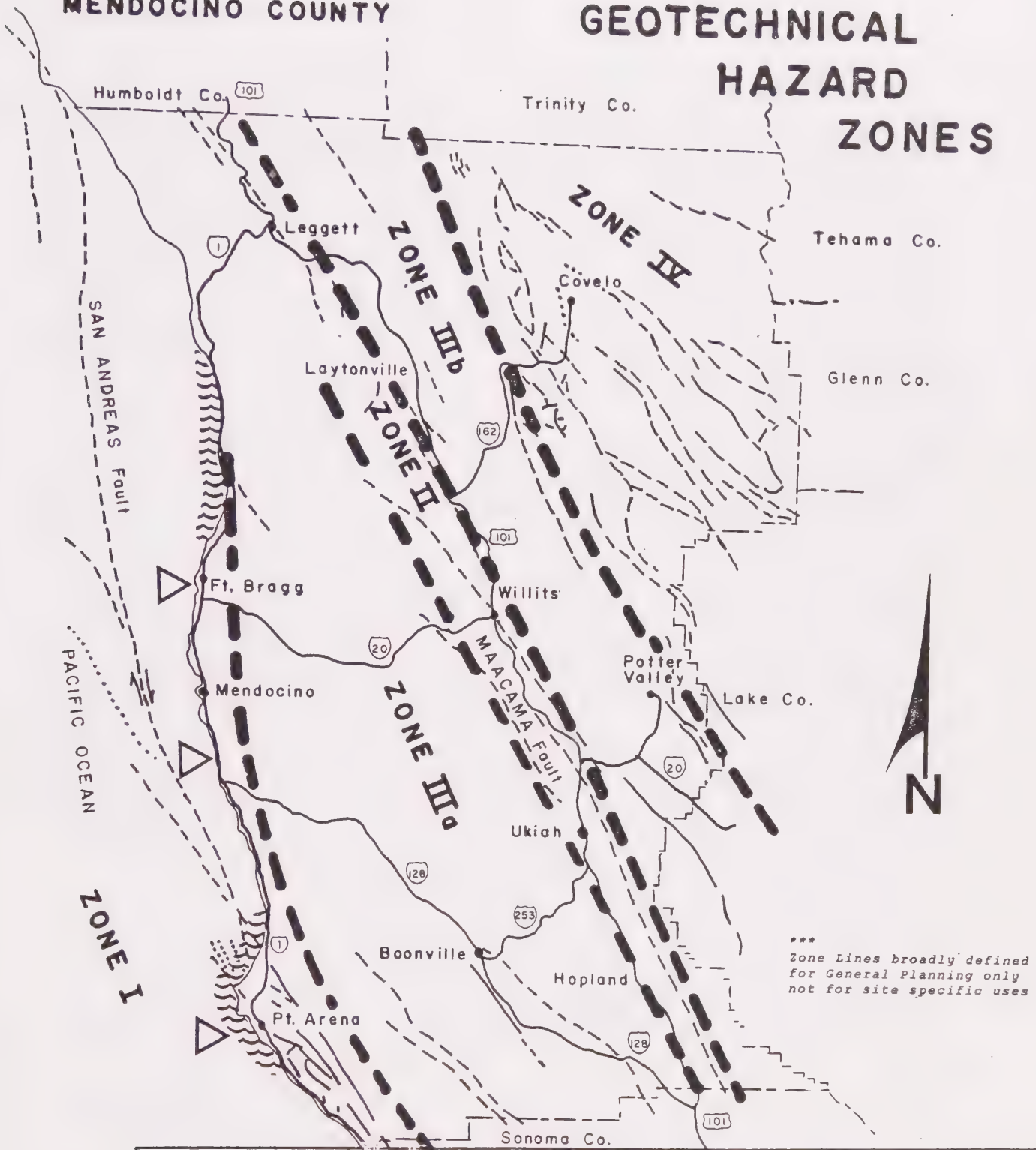
"On the morning of April 18, 1906, the earth rocked so violently that it seemed as if some giant had taken it in his hands and was shaking it relentlessly. When it was all over, the mill was off its foundations and badly wrecked; and a large part of Fort Bragg was destroyed. As in San Francisco the quake itself was bad -- but the fire which followed was vastly worse and did most of the damage."

The 1906 earthquake was due to movement along the San Andreas Fault, the major fault running north and south near to or on the California Coast. The Geotechnical Hazard Zone Map on page 11 shows the San Andreas Fault cutting through the southwest portion of the county.

North of Point Arena the San Andreas Fault is offshore and, if projected northwest along its trend line, probably does not again intersect the shoreline until Point Delgada. Sea floor geological and geophysical data are insufficient to determine with certainty whether or not the Shelter Cove Trace connects with the offshore portion of the San Andreas Fault. However, isoseismic data for the 1906 earthquake and recent offshore seismic reflection survey work suggest that the fault turns northward near Point

# MENDOCINO COUNTY

# GEOTECHNICAL HAZARD ZONES



\*\*\*  
Zone Lines broadly defined  
for General Planning only  
not for site specific uses

LEGEND								
Symbol	Fault Feature		Hazard Potential	Zone I San Andreas Fault	Zone II Maacama Fault	Central Zone IIIa Coastal Belt	County Zone IIIb Eastern Belt	Zone IV Northeast Belt
————	Known	FIG. 3  PAGE 11	Ground Shaking	High	H	M	M	L
- - - -	Inferred		Surface Faulting	H	M	L	L	L
.....	Concealed		Landslides	Medium	H	M	H	H
■ ■ ■ ■	Zone Line Approx.		Tsunami	M - H	O	L	O	O
	Tsunami Potential		Seiche	Low	L	L	L	L
△	Harbor Damage		Liquefaction	L - M	L - M	L	L	L
County Planning Dept				Scale 1"=12mi.	Date Apr 80	Source: Cal Div. Mines & CDF	drawn by jdt2	



Arena and connects with the trace at Shelter Cove.

It has been suggested by geologists (Allen, 1965) that the section of the San Andreas which ruptured in 1906 and another section further south near Fort Tejon are characterized by occasional great quakes rather than frequent smaller (though still potentially damaging) earthquakes and tectonic creep. In a general way then, this seems to indicate that the area may be subject to infrequent but severe shocks. Only a few small earthquakes have occurred in this area since 1906. As stated earlier in the general information section, earthquake intervals cannot be predicted within short time periods; however, there is a very real possibility of a major earthquake ranging in magnitude 6.5 to 8 within the next 25 to 50 years in this portion of Mendocino County (Wentworth, 1972) and Zone I is considered as having the highest potential for disaster of the four zones in the county.

Careful land use planning and regulations for building and development will permit development to continue and reduce risk to acceptable levels. The area in Mendocino County most affected by any movement of this major fault is between Gualala and Point Arena, where the fault is onshore.

A brief description of movement during the 1906 earthquake, which had a Magnitude of 8.3, will illustrate the potential problems of this area. This part of the coast experienced intensities of IX to X on the Modified Mercalli scale. Horizontal displacement of the fault ranged from ten to sixteen feet and there was also minor vertical displacement, generally not exceeding one foot. Roads and railroads crossing the fault were rendered impassible. Structures straddling the fault trace were either destroyed or badly ruptured.

Between Shelter Cove and Point Arena the San Andreas fault lies from five to 25 miles west of the coast, depending on whether one assumes the fault connects with the Shelter Cove trace of 1906 or projects northwestward from Point Arena. A strong shock occurred in 1898 near Point Arena, yielding intensities VIII to IX, and damaging Mendocino, 25 miles away.

Ground Failure -- Landslides in the coastal belt are usually slumps and earth flows. This is due to the geological history of the area and the high annual rainfall (in comparison to the rest of the county), steep slopes, and intense weathering. Roads heading inland do show evidence of recent landsliding and an earthquake could cause road blockage. Highway 1 could be damaged by landslides associated with a major earthquake.

Grading for hillside development can trigger old landslides and initiate new ones. Tragic consequences of unwise hillside use have resulted from such actions in the Bay Area and in Los Angeles where houses have slid down hill. The steep slopes in the San Andreas Fault Zone should be protected both from an aesthetic standpoint and from that of public safety.

Most active landslides have total movements ranging from a few inches to hundreds of feet. In rare instances annual movements of about 300 feet have occurred. When these cross highways, railroad or utility lines, sizeable economic loss occurs. This risk of landslides should be taken into account when locating utility lines or development which will require such installations.

Ground Shaking -- This is a general hazard in all Mendocino County but is particularly important in the area of the San Andreas Fault Zone. The Geotechnical Hazard Zones Map shows generalized areas of major risk and special regulations should cover location and construction of all buildings in these areas. Particular care must be used in locating structures necessary for public safety and those which are for public assembly, including schools. Special construction and location regulations are needed for these areas. Soil testing and geologic-seismic field investigations should be required before permitting construction of major projects, either public or private.

Seismically-induced Water Waves - Tsunami and Seiche -- The coast is subject to a tsunami hazard. The following Table and the map on page V-12 show the areas of particular concern.

The seiche hazard for enclosed bodies of water is not a significant concern in the county. The largest enclosed body of water is Lake Mendocino. The normal pool elevation of the lake is 738 feet and spillway elevation is 765 feet. Because seiche runoff is not expected to exceed 10-20 feet maximum, and because development on the perimeter of the lake is generally not permitted, it would appear there is a reasonable margin of safety in terms of any potential seiche damage.

In the future, as the inland valleys increase their population and become more urban, more dams and reservoirs may be needed to insure a quality water supply. Conceivably seiches on such inland bodies of water could pose a potential problem some day. California law recognizes the catastrophic effect of dam failure and requires all responsible agencies to prepare maps showing potential inundation areas. These must be used in land use planning and in plans for disaster preparedness. No area should be permitted to urbanize unless a water supply can be provided without creating a potential hazard. This consideration applies not only to the valleys in the San Andreas Fault Zone, but to all Zones.

TSUNAMI HAZARD  
MENDOCINO COASTAL AREA

NAME	HAZARD
1. Arena Cove area	Potential damage to boats and harbor facilities.
2. Manchester Beach State Park to Iverson Point	Special caution during alert*
3. Albion River	Potential damage to boats and harbor facilities
4. Noyo Bay area	Potential damage to boats and harbor facilities
5. Mackerricher State Park to Ten Mile River	Special caution during an alert*

\*Area should be cleared if flood tide and tsunami are coincident.

Source: California Division of Mines and Geology State of California  
Department of Conservation Seismic Safety Information - 1974



Expected Recurrence Rate -- Wave height and damage due to tsunamis in California, regardless of where they originate, have always been greatest at Crescent City in Del Norte County. Using information recorded there and at the Presidio in San Francisco, curves have been constructed which suggest future tidal wave action (Weigel, 1970).

The curve for San Francisco suggests that a wave height or "run up" equal to or greater than 6.5 feet can be expected once in 50 years. The curve for Crescent City suggests a wave height of about 17 feet or greater each 50 years or about 26 feet every 100 years. The "run up" in 1964 of 21 feet had a recurrence of about 80 years (Department of Mines and Geology, 1972).

Estimated run-up -- Procedures for estimating expected tsunami run-up have been developed by James R. Houston and Andrew W. Garcia of the Army Corps of Engineers for the HUD type 16 Flood Insurance Study. The maximum probable run-up can be calculated for each 5 minutes of latitude of the west coast using this report and a good local topographic map. It is possible to delineate the maximum probable 100 year and 500 year tsunami run-up of distant origin type. However, tsunami run-up of local origin type caused by submarine landslides likely to be triggered by earthquakes along the San Andreas Fault pose a significant potential hazard. This latter hazard warrants additional study or consideration during planning and development reviews.

Tsunami Warning System -- The U.S. Coast and Geodetic Survey, National Oceanographic and Atmospheric Administration, Department of Commerce, operates a Seismic Sea-Wave Warning System. The system uses seismographs to detect and locate earthquakes; tidal gauges to detect whether tsunami waves have indeed been generated; and automatic alarms to warn of any tsunami that is detected.

From a network of stations distributed throughout the Pacific Ocean basin, the travel and arrival times for individual tsunamis are plotted with an accuracy of one and a half minutes per hours' travel time. Warning of an approaching tsunami is communicated to the appropriate federal agencies and to the U.S. Weather Bureau networks.

The Director of Civil Defense has the responsibility and authority to initiate emergency preparedness acts in the county in the event of an oncoming tsunami. Emergency procedures have been outlined in the Mendocino County Emergency Plan.

Under the present warning system, at least several hours are available to evacuate the population to a safe place and make other emergency preparations.

Zone II -- Maacama Hazard Zone. Description of Faults and Summary of Hazards. The Maacama Fault trends northwest from the Hopland area to Laytonville. This fault is considered potentially capable of generating a Magnitude of 7 or greater earthquake. The Geotechnical Hazard Zones Map shows that Zone II is rated high for landslide potential. Level valley floors are more stable than the steep valley walls and mountainous areas. Landslides and evidence

of soil instability can be observed widely throughout the southern county. Cutting and grading hillsides is risky in many locations within this relatively landslide prone zone associated with the Maacama Fault. Steeply sloped and unstable valley walls and the alluvial deposits of the valley floors make the area subject to a combination of hazards. The chief hazard is landsliding and the secondary hazard is potential soil liquefaction due to accumulation of water in the alluvial soil. The tendency for landsliding and liquefaction is strengthened by the naturally heavy rainfall in the county. Road building and maintenance in steep unstable terrain has always posed problems and in a potentially active area such as Zone II particular care must be exercised. Maintenance of utility lines is also difficult in such areas. Where soil and terrain preclude safe and sure access, large scale urbanization must also be precluded. Land use planning for inland valleys must take these factors into account.

The complex geological conditions found in the county result in varying risks between valleys and even within one valley, and regulations should vary accordingly. Because the major concentrations of people are in the inland valleys, regulations are particularly needed and studies must be made which will lead to protection of existing and future populations.

Zone III -- The Central County Hazard Zone. Description of Faults and Summary of Hazards. There are many small faults in the Franciscan Assemblage. Most of these are generally considered to be inactive. The Healdsburg Fault is in this zone. Soil stability is poor in much of the area. Although the faults are at present considered inactive, significant numbers of people are living in areas which will be affected if movement were to occur. Earthquake risk is generally lower in Zones III and IV than in Zones I and II, but landslides in areas such as this can be triggered by minor earth movement, by heavy rainfall, weathering or other natural causes. Grading of hillsides for development increases the landslide risk unless competent professional assistance is employed. As urbanization continues, the hazards from shaking, slope failure and earth movement will increase unless development controls to minimize risks are implemented. The Geotechnical Hazard Zones Map on page V-12 shows general conditions for the area.

Zone III has been divided into two subzones. The Maacama Fault Zone is the approximate boundary between the two subzones. Zone IIIa is the Coastal Belt of the Franciscan Assemblage. The Coastal Belt consists of younger and generally more stable rock units than the older rocks of the Eastern Belt which is designated as Zone IIIb.

Zone IV -- Northeast County Hazards Zone. The northeast portion of Mendocino County is furthest removed from known active and potentially active faults. Only inactive faults are known in this region. Consequently, surface rupture is not expected. The level of ground shaking from distant active faults will be less than the western and southern areas of the county closer to the San Andreas and Rogers Creek Faults.

Potter Valley and Round Valley are significant areas because they are large, flat to gently sloping areas. Slope failure hazards are minimal compared to other areas in this zone. However, because locally saturated

near-surface conditions are known, the potential for liquefaction exists. Liquefaction requires the combination of sufficiently strong ground shaking, saturated conditions, and relatively "clean" granular materials. Without specific soil tests and seismic investigations, it is not possible to determine the significance of the liquefaction potential.

Landslides are the most significant geologic hazard in the Northeast County Hazards Zone. Any area of 20% or steeper slope in the Franciscan Assemblage rocks should be treated as having a potential for existing or induced slope failure unless there is geologic evidence to the contrary.

#### Alquist-Priolo Special Studies Zones

The Alquist-Priolo Special Studies Act, in effect since March 7, 1973, requires that special studies zones be delineated along known active faults in California, and that cities and counties must withhold permits for certain specified development projects within the special studies zones until geologic investigations demonstrate that the sites are not threatened by surface displacement from future faulting. In Mendocino County special studies zones have been established along several fault traces associated with the San Andreas Fault in the Point Arena-Gualala vicinity. The Division of Mines and Geology is also studying segments of the Maacama Fault from Hopland to Laytonville. The Division anticipates that by 1982 special studies zones will be established along portions of this fault. Special studies zones maps prepared by the California Division of Mines and Geology are on file in the County Planning Department office. The special studies zones are also depicted on the Mendocino County Hazards map accompanying the General Plan.



## STATEMENT OF GOALS AND POLICIES

The goals, policies and standards set forth herein are based on geologic information contained in this element of the General Plan and publications of the California Division of Mines and Geology and the U.S. Geological Survey.

### GOALS

The seismic safety goals of the County of Mendocino are to:

1. Recognize seismic hazards and their possible effect on the community.
2. Achieve public awareness of earthquake and other geologic hazards and the available protection measures.
3. Continue to obtain engineering geology expertise and advice upon which to base land use planning decisions.
4. Insure that critical structures such as dams, schools, and hospitals, vital public safety facilities, and emergency communication facilities remain functional through an earthquake.
5. Reduce or minimize the geologic hazards to life and property through land use planning and administration of construction standards.
6. Facilitate post-disaster recovery.
7. Assure sound and rational reconstruction following geologic disasters.

### POLICIES

#### Geologic and Seismic Evaluations.

It is the policy of the County of Mendocino to:

1. Support scientific investigations which will improve the knowledge of active fault zones, areas of instability and similar hazardous geologic conditions in Mendocino County.
2. Incorporate geologic and seismic engineering data into the element as it becomes available. If significant data becomes available which affects the element, the element should be revised.

3. Require that geologic and seismic reports required by the county comply with the guidelines developed by the California Division of Mines and Geology, CDMG Note Numbers 37, 43, 44, 47 and 49. All geologic and seismic reports shall be prepared by engineering geologists, soils engineers, or registered civil engineers experienced in soils work, licensed in the State of California, as required by Sections 6730-6734 and 7800-7838 of the Business and Professions Code.
4. Routinely consider geologic and seismic criteria in its permitting authority and in determining land use and development policies.

To implement county policy, the following programs should be conducted:

1. The Seismic Safety Element should be reviewed every two years and updated at least every five years with new geologic data. 1/
2. Create a Geotechnical Advisory Committee comprised of representatives from recognized professional organizations and societies to assist in the periodic review of the Seismic Safety Element and to report to the Board of Supervisors with recommendations on significant new geologic and seismic information that affects the citizens of Mendocino County. The Geotechnical Advisory Committee shall have no decision-making authority. 2/
3. Recommend and encourage appropriate state and federal agencies to continue research on fault location and activity, landsliding, tsunami, and structural response to earthquake effects within Mendocino County.
4. Designate a central collection agency for geologic, seismic, and soil engineering studies and reports within the county.
5. Incorporate information referenced in this element and any additional published geologic and seismic information in the preparation of environmental impact reports.

### Existing Development

It is the policy of the County of Mendocino to:

1. Require that structures owned or leased by the County of Mendocino that do not meet Uniform Building Code requirements for seismic safety be strengthened, abated, or downgraded in occupancy in an orderly manner. Priorities for rehabilitation or phasing-out of existing unsafe structures shall be based on hazard to life and level of occupancy.

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1/ Important data can be expected from investigations planned to begin in April, 1980 in Mendocino County by the California Division of Mines and Geology. The investigations will be conducted in response to the Alquist-Priolo Geologic Hazard Zones Act.

2/ Appendix 1 describes the functions and composition of a Geotechnical Advisory Committee.



2. Grant special consideration to historic or particularly aesthetic structures that might otherwise be destroyed by enforcement of building or seismic codes through the downgrading of occupancy, granting of variances, or other similar means.

To implement County policy, the following programs should be implemented:

1. Survey older structures, especially places of public assembly, within the County for conformance with the current Uniform Building Code and/or other ordinances and standards adopted by the County to protect against seismic hazards.
2. In a time-phased manner, systematically remove or reinforce hazardous structures, especially critical structures such as hospitals, schools, auditoriums, bridges, overpasses and dams that are within the jurisdiction of the County. Priority should be given to evaluation and correction of unreinforced masonry structures, starting with those most hazardous to life. 4/
3. Include in any building inspection of existing structures conducted by the County, inspections for weak or poorly anchored parapets, signs, glass, machinery, shelving, fixtures, and other non-structural elements or architectural detailing that might cause injury if they were to fall or break during an earthquake. Removal or strengthening should be required in conformance with the requirements of the current Uniform Building Code and/or other ordinances and standards adopted by the County to protect against such hazards.
4. Develop and adopt a parapet ordinance that would require the removal or strengthening of poorly anchored parapets, signs, and architectural detailings. 5/
5. Request seismic safety evaluations of federal and state governmental structures not under County jurisdiction by the appropriate agencies.

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4/ Masonry structures built before 1933, and perhaps before 1948, especially larger commercial structures, are more likely to be unreinforced masonry and susceptible to collapse in earthquakes. The significance of the year 1933 is that the Field and Riley Acts became law in California that year and required reinforcement in schools and certain other structures. Later, in 1948, earthquake regulations were adopted as a legally binding section of the UBC for the first time. Previously, earthquake standards were set forth in the Appendix of the UBC and were not a mandated part of the Code. It is more likely then, that a building constructed before 1948 would be less able to withstand the shock of an earthquake than one built after 1948.

5/ Appendix 5 gives an example of a parapet ordinance. Falling debris is the major cause of death during an earthquake. People outside building on sidewalks are particularly vulnerable.

6. Request federal or state assistance to implement corrective measures as needed.
7. Identify critical streets, highways, railroads, and buried utility lines that are needed to remain open to provide vital services in the event of a damaging earthquake and incorporate the necessary changes to the County of Mendocino Emergency Plan if potential damage to these facilities is probable. 6/
8. Information should be distributed to the public on the hazards presented by geologic occurrences and measures to protect life and property. Major contact points with the public such as the Building Inspection Division, Planning Department, and Public Works Center are logical distribution points for information distribution. 7/
9. Establish and/or coordinate capital improvement programs and projects aimed at eliminating existing high risk situations. These may include regional or state high risk insurance programs.

#### New Development -- Overview Policies

It is the policy of the County of Mendocino that:

1. Geologic, seismic and soil engineering information shall be used as a factor in evaluating all future land use, development, and the type of construction appropriate for areas of seismic and geologic hazards.
2. All buildings intended for human habitation shall be designed to compensate for known seismic and geologic hazards and to meet the current Uniform Building Code and/or other ordinances and standards adopted by the county to protect against such hazards.
3. Engineering geology and foundation engineering reports of site investigations be submitted for all new critical facilities designated in Table 2 as having importance factors of 1 or 2, regardless of location.

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6/ The Emergency Plan as adopted does not consider whether or not emergency facilities needed for a major peacetime emergency, such as an earthquake disaster, will survive the disaster.

7/ The office of Emergency Services in Sacramento acts as a clearing-house for agencies such as the U.S. Geological Survey and California Division of Mines and Geology, and makes multiple copies of short, informative pamphlets regarding earthquakes and other geologic hazards available to counties free of charge.

4. Critical facilities designated in Table 2 as having importance factors of 1 or 2 shall be located, designed, constructed, and operated in a manner to maximize their ability to remain functional in the event of disaster.
5. In the San Andreas Fault Zone and Maacama Hazard Zone as shown on Figure 3, and in the areas susceptible to landslide as indicated on maps compiled for Mendocino County in 1979 by the California Department of Forestry, geologic and seismic reports accompanied by soil engineering analysis shall be prepared for high occupancy, multiple habitation structures of importance factors 3 and 4 as shown on Table 2, unless waived by the Building Official. Copies of the CDF maps are on file in the County Planning Department office.
6. New lots of record shall be created in areas zoned for residential, commercial or industrial use only when sufficiently-sized areas free of surface faulting, ground failure, or tsunami are available to allow the use permitted by zoning.

To implement the county's policies, the county should:

1. Require geologic, seismic, and/or soil engineering reports as necessary prior to the issuance of building permits where known geologic hazards exist and issue building permits only in areas of geologic and seismic risk consistent with risk levels presented by the "Scale of Acceptable Risks", Table 2.
2. Amend county ordinances to reflect seismic and geologic considerations. Suggested amendments are underlined.
  - A. Zoning Ordinance, Chapter 20 of the Mendocino County Code.
    1. Page 268, following Section 20-72.  
Adopt an ordinance creating a Tsunami Inundation Area Combining District similar to the Flood Plain Combining District.
    2. Page 268, following Section 20-72.  
Apply the Tsunami Inundation Area Combining District to appropriate lands within the county.
    3. Page 268, following Section 20-72.  
Consider adding an additional combining zone for areas with significant known seismic and/or geologic hazards.
    4. Page 273 B, Section 20.80(a)(1).  
"Because of special circumstances applicable to the property including size, shape, topography, location, geologic and/or seismic hazards, or surroundings, the strict application of the zoning ordinance deprives such property of privileges enjoyed by other property in the vicinity and under identical zoning classification, and"



B. Division of Land Regulations, Chapter 17 of the Mendocino County Code.

Page 150, (6)

"Either a statement by a Soil Engineer or a registered civil engineer experienced in soil analysis as to the feasibility of the proposed development in relation to soil characteristics and a statement by a Certified Engineering Geologist on geologic hazards, or a preliminary geologic hazards report based upon adequate test borings or excavations. The County Engineer may, on the basis of such statement of preliminary report, require a more extensive geological hazards report and a soil investigation."

Page 156, (7)

"When a soil report or geological hazards report has been prepared, this fact shall be noted in the Final Map, together with the date of the report and the name of the Engineer making the soil report or the Certified Engineering Geologist making the geological hazards report." 8/

C. Uniform Building Code (1976)

1. Chapter 70, Section 7006(c)

"When required by the Building Official, each application for a grading permit shall be accompanied by two sets of plans and specifications, and supporting data consisting of a soil engineering report and engineering geology report. The soils engineering and engineering geology reports shall be required in landslide areas, or areas where the risk of liquefaction is moderate or high. At the discretion of the Building Official, single-family dwellings on single-lot developments may be exempted. The plans and specifications shall be prepared and signed by a Civil Engineer when required by the Building Official. The engineering geology report shall be prepared by a geologist who is registered by the State and certified in engineering geology or by a registered civil engineer experienced in soils work, as provided for in the Business and Professions Code of the State of California.

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8/ These proposed changes are suggested to prevent a conflict with Sections 6730-6734 and 7800-7838 of the Business and Professions Code, Health and Safety Code, and the Government Code of the State of California.

D. Environmental Review Guidelines, Chapter 21 of the Mendocino County Code.

1. Page 2, Section 21.02.020(B).  
"Take all action necessary to provide the people of this County with clean air, and water, enjoyment of aesthetic, natural, scenic, and historic environmental qualities, protection from geologic and seismic hazards, and freedom from excessive noise."
2. Page 9, Section 21.06.040  
"The project has the potential to degrade the quality of the environment, subject human lives and property to significant geologic and/or seismic hazards, substantially reduce the habitat of fish and wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of plant or animal or eliminate important examples of the major periods of California history or prehistory."

New Development -- Surface Faulting

It is the policy of the County of Mendocino to:

1. Prohibit new building sites within the Special Studies Zones as defined by the Alquist-Priolo Special Studies Zones Act unless an appropriate geologic investigation establishes sufficient and suitable land area for development. Applications for development or division of land into two or more parcels of record in these Special Studies Zones shall be accompanied by a geologic report prepared by a State certified engineering geologist and directed to the problem of potential surface fault displacement through the project site.
2. Encourage the use of land in active fault zones for compatible uses.
3. No new structure for human habitation shall knowingly be constructed across the trace of an active or potentially-active fault. Traces of potentially-active faults are shown on Special Study Zones maps prepared by the State Geologist and can be inferred where Quaternary materials have been offset along faults from the geologic map compilation for Mendocino County prepared by the California Department of Forestry.
4. Development shall be limited and regulated within a one-eighth mile zone on either side of any potentially active fault trace in accord with recommendations developed by geologic and seismic reports until such time that set back distances are established by the Division of Mines and Geology as required by the Alquist-Priolo Act.



To implement county policy the following programs should be conducted:

1. Implement the Alquist-Priolo Special Studies Zones Act of the Public Resources Code.
2. Cooperate with the California Division of Mines & Geology in establishing appropriate setback distances along the trace of the San Andreas and Maacama Faults.
3. Encourage the California Division of Mines and Geology to determine those portions of the Maacama Fault that are subject to surface displacement.
4. Consider adoption of the Combining District for areas of geologic or seismic hazards or consider fault hazard zoning which would prohibit human occupancy, require a land use compatible with both the degree of risk and adjacent land uses, or stipulate minimum site investigation and safety standards. 10/

#### New Development -- Ground Shaking and Liquefaction

It is the policy of the County of Mendocino to:

1. Require that structures for human habitation, including residential, commercial and industrial uses incorporate engineering design measures to mitigate against risk to life in areas subject to excessive ground shaking and liquefaction during an earthquake.
2. Prohibit structures necessary for public safety or emergency services in areas subject to ground shaking and subsequent failure unless the only alternate sites would be so distant as to thereby jeopardize the safety of the community it serves.
3. All new structures of importance factors 1 and 2, as shown on Table 2, shall be designed and constructed to remain functional after the maximum probable earthquake as designated by the required geologic and engineering reports. Structures of importance factors 1, 2, and 3 shall be designed and constructed to resist collapse in the event of the maximum credible earthquake designated by the required geologic and engineering reports.

Structures of importance factor 4 shall be designed and constructed to resist anticipated earthquake forces as provided for in Section 2314 of the Uniform Building Code as adopted by the County of Mendocino and/or other ordinances and standards adopted by the county to protect against such hazards.

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10/ Compatible uses in areas of active fault traces subject to surface displacement include, but are not limited to, open space, certain recreational areas (such as golf courses, horseback riding, and bicycle trails), cemeteries, parking lots, Class 3 solid waste disposal sites, certain agricultural uses (such as the growing of crops and grazing of livestock), and natural resource extraction or harvesting.

To implement county policy, the following programs should be conducted:

1. Enforce the earthquake regulations of the current Uniform Building Code and/or other ordinances and standards adopted by the county to protect against seismic hazards.
2. Institute a building strong-motion recording instrumentation program for fire and police stations where continuous monitoring equipment can be maintained. This program would provide information on ground shaking responses at various sites throughout the County.
3. Incorporate new information on ground shaking potential in various portions of the County into the basic lateral force equations of the Uniform Building Code. 11/

#### New Development -- Landslides

It shall be the policy of the County of Mendocino to:

1. Require evaluation of slope stability prior to development in areas where the potential for landslides exists. The evaluation shall include structural foundation engineering of the actual site and should include the possible impact of the project on adjacent lands. At the discretion of the Building Official, this evaluation may be waived for existing single-family lots.
2. Prohibit development in areas of known landslides and slopes where weak geologic materials are susceptible to landsliding except where engineering geology investigations indicate such sites are stable or can be made stable, providing appropriate mitigation measures in proportion to risk are taken. Where mitigation measures can correct slope instability, the county should require that the foundation and earthwork be supervised and certified by a licensed geotechnical engineer.

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11/ Ground shaking is determined by the energy of an earthquake and the underlying earth materials. Because earthquake ground shaking is the principal cause of damage, the subject of estimating ground shaking intensity is extremely important. There are two known major faults in Mendocino County capable of causing ground shaking. Current estimates of the maximum magnitude for each fault are: San Andreas Fault - 8.5, Maacama Fault - 7.5. The estimate for the Maacama Fault was determined by the Army Corps of Engineers. Some investigators in the U.S. Geological Survey estimate the Maacama Fault may be capable of generating an earthquake with an upper range of 8.1 magnitude. Data from past earthquakes has shown that the intensity of ground shaking can be several times higher at sites underlain by soft, valley alluvium than a firm bedrock.

3. New structures of importance factors 1 and 2, as shown on Table 2, located within areas subject to liquefaction shall be designed and constructed to resist the effects of liquefaction without significant damage so that they remain functioning after the event. New structures of importance factor 3 and new multiple habitable structures of importance factor 4 located within areas subject to liquefaction shall be designed and constructed to resist collapse from any anticipated effects of liquefaction, unless waived by the Building Official. Areas subject to liquefaction are poorly consolidated earth material, often including Quaternary alluvium, where water saturated conditions occur within 50 feet of the ground surface.

To implement county policy the County should:

1. Establish slope stability areas for areas with, or directly adjacent to slopes of 5 horizontal to 1 vertical (20%), or greater, in geologic units susceptible to slope failure and for areas of mapped landslides. 12/

New Development -- Tsunami

It is the policy of the County of Mendocino to:

1. Proposed construction of importance factors 1 and 2, as shown in Table 2, shall not be constructed within areas subject to tsunami unless it can be conclusively demonstrated that the facilities can remain functioning after any potential tsunami occurs. New construction of importance factor 3, located within areas subject to tsunami, should be designed to resist possible wave damage.

Areas subject to tsunami inundation are low lying coastal areas (less than 30 feet elevation) and are generally shown on Figure 3.

2. Restrict land uses in areas subject to tsunami to open space, agriculture, and those uses which, due to their dependency upon ocean access, could not be located elsewhere. Prohibit the construction of high occupancy structures within tsunami hazard areas.
3. Adopt and implement evacuation plans for areas subject to tsunami.

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12/ Studies conducted by the U.S. Geological Survey indicate that over 70% of all landslides take place on slopes steeper than 15% and over 60% take place in soils overlying or within bedrock units considered to be highly susceptible to slope failure. The Geotechnical Hazard Zones Map shows geologic units and their susceptibility to landsliding.

To implement county policy the County should:

1. Zone and map low-lying areas on the coast susceptible to tsunami inundation as Tsunami Inundation Areas. 13/
2. The Mendocino County Office of Emergency Services should cooperate with the U.S. Coast and Geodetic Survey and National Oceanographic and Atmospheric Administration in developing emergency procedures for potential areas of tsunami inundation.

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13/ The height of a tsunami is dependent upon initial wave height, the coastal configuration, and the continental shelf. Some investigators predict a tsunami height of 23 feet every 100 years for the Mendocino Coast. At high tide, the elevation of such a wave would be about 30 feet, assuming the wave was neither diminished or increased in height by local changes in coastal configuration.





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## APPENDIX 1

### GEOTECHNICAL ADVISORY COMMITTEE

To provide technical guidance in the area of geologic and seismic hazard mitigation, it is recommended that a Geotechnical Advisory Committee be appointed.

The Committee shall provide technical guidance to the Board of Supervisors, the Planning Commission and the Planning Department of the County of Mendocino for items related to land use planning as affected by seismicity (faults, seismic activity, ground shaking, liquefaction, et cetera). In addition, the Committee's recommendations shall be obtained for all appeals related to land use designation, requirements for professional analyses, or design criteria established by the Board of Supervisors of the County of Mendocino, when such designations, requirements or other criteria have been established to further seismic safety. The actions of the Committee shall be advisory to the Board of Supervisors, Planning Commission, Director of Planning, and the Director of Building Inspection.

The Committee shall be composed of a planner, a structural engineer, a civil engineer with expertise in soil engineering, an engineering geologist, an engineering seismologist, a marine geologists, and one alternate each. Engineers shall be licensed by the State of California and have experience in land use planning and seismic analysis. The professional societies shall be solicited for recommendations to the Committee. Professional societies consulted should include: American Institute of Planners or American Institute of Architects, Structural Engineers Association of California, American Society of Civil Engineers, Association of Engineering Geologists, and the Earthquake Engineering Research Institute.



## APPENDIX 2

### GUIDELINES FOR STANDARDS OF PRACTICE OF GEOLOGY IN CALIFORNIA

The State Board of Registration for Geologists and Geophysicists met with regulatory geologists from cities and counties throughout California, with Division of Mines and Geology personnel, with representatives of associations, and with individual consultants to discuss possible violations of the Act and practices which may not be violations of the Act but substantially affects the public. Three meetings were held and over 20 participants discussed the adequacy of geologic reports, and the responsibility of the board, the review agencies, and the consultants to the public.

As a result of these meetings, the board decided that responsible geologic work is represented by the guidelines for practice issued by the California Division of Mines and Geology for the investigation of geologic hazards and the preparation of reports as California Division of Mines and Geology Notes Numbers 37, Guidelines for Determining the Maximum Credible and the Maximum Probable Earthquakes; 44, Recommended Guidelines for Preparing Engineering Geologic Reports; 46, Guidelines for Geologic/Seismic Considerations in Environmental Impact Reports; 47, Recommended Guidelines for Geologic Reports on Offshore Operations and Facilities; 48, Checklists for the Review of Geologic/Seismic Reports; and 49, Guidelines for Evaluating the Hazard of Surface Fault Rupture.

The board adopts these guidelines as its policy statement on the adequacy of professional geological work under Section 7860(c) of the Business and Professions Code for the geologic profession in California. The guidelines will be used to facilitate a screening of the geologic reports for violations of Section 7860(c).

The board suggests that all regulatory agencies consider adoption of these notes or equivalency as guidelines for investigation and for report preparation. Also, it urges all geologists to utilize the procedures outlined in the notes when they investigate conditions at a project and when preparing reports.







# CALIFORNIA DIVISION OF MINES AND GEOLOGY

DIVISION HEADQUARTERS  
RESOURCES BUILDING  
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**CDMG NOTES****NUMBER 37**

## GUIDELINES TO GEOLOGIC/SEISMIC REPORTS

The following guidelines are taken from "Geology and earthquake hazards: Planners guide to the seismic safety element" prepared by Grading Codes Advisory Board and Building Code Committee of the Southern California Section, Association of Engineering Geologists, July, 1973. They are reprinted here courtesy of the Association of Engineering Geologists.

### I. Introduction

This is a suggested guide or format for the seismic section of engineering geologic reports. These reports may be prepared for projects ranging in size from a single lot to a master plan for large acreage, in scope from a single family residence to large engineered structures, and from sites located on an active fault to sites a substantial distance from the nearest known active fault. Because of this wide variation, the order, format, and scope should be flexible and tailored to the seismic and geologic conditions, and intended land use. The following suggested format is intended to be relatively complete, and not all items would be applicable to small projects or low risk sites. In addition, some items would be covered in separate reports by soil engineers, seismologists, or structural engineers.

### II. The Investigation

#### A. Regional Review

A review of the seismic or earthquake history of the region should establish the relationship of the site to known faults and epicenters. This would be based primarily on review of existing maps and technical literature and would include:

1. Major earthquakes during historic time and epicenter locations and magnitudes, near the site.
2. Location of any major or regional fault traces affecting the site being investigated, and a discussion of the tectonic mechanics and other relationships of significance to the proposed construction.

#### B. Site Investigation

A review of the geologic conditions at or near the site that might indicate recent fault or seismic activity. The degree of detail of the study should be com-

patible with the type of development and geologic complexity. The investigation should include the following:

1. Location and chronology of local faults and the amount and type of displacement estimated from historic records and stratigraphic relationships. Features normally related to activity such as sag ponds, alignment of springs, offset bedding, disrupted drainage systems, offset ridges, faceted spurs, dissected alluvial fans, scarps, alignment of landslides, and vegetation patterns, to name a few, should be shown on the geologic map and discussed in the report.
2. Locations and chronology of other earthquake induced features caused by lurching, settlement, liquefaction, etc. Evidence of these features should be accompanied with the following:
  - a. Map showing location relative to proposed construction.
  - b. Description of the features as to length, width and depth of disturbed zone.
  - c. Estimation of the amount of disturbance relative to bedrock and surficial materials.
3. Distribution, depth, thickness and nature of the various unconsolidated earth materials, including ground water, which may affect the seismic response and damage potential at the site should be adequately described.

#### C. Methods of Site Investigation

1. Surface investigation
  - a. Geologic mapping.
  - b. Study of aerial photographs.
  - c. Review of local ground water data such as water level fluctuation, ground water barriers or anomalies indicating possible faults.
2. Subsurface investigation
  - a. Trenching across any known active faults and suspicious zones to determine location and recency of movement, width of disturbance, physical condition of fault zone materials, type of displacement, and geometry

*(over)*

b. Exploratory borings to determine depth of unconsolidated materials and ground water, and to verify fault-plane geometry. In conjunction with the soil engineering studies, obtain samples of soil and bedrock material for laboratory testing.

c. Geophysical surveys which may indicate types of materials and their physical properties, ground water conditions, and fault displacements.

### III. *Conclusions and Recommendations*

At the completion of the data accumulating phase of the study, all of the pertinent information is utilized in forming conclusions of potential hazard relative to the intended land use or development. Many of these conclusions will be revealed in conjunction with the soil engineering study.

#### A. *Surface Rupture Along Faults*

1. Age, type of surface displacement, and amount of reasonable anticipated future displacements of any faults within or immediately adjacent to the site.
2. Definition of any areas of high risk.
3. Recommended building-restrictions or use-limitations within any designated high risk area.

#### B. *Secondary Ground Effects*

1. Estimated magnitude and distance of all relevant earthquakes.
2. Lurching and shallow ground rupture.
3. Liquefaction of sediments and soils.
4. Settlement of soils.
5. Potential for earthquake induced landslide.

### IV. *Presentation of Data*

Visual aids are desirable in depicting the data and may include:

#### A. *General data*

1. Geologic map of regional and/or local faults.
2. Map(s) of earthquake epicenters.
3. Fault strain and/or creep map.

#### B. *Local or site data*

1. Geologic map.
2. Geologic cross-sections - illustrating displacement and/or rupture.
3. Local fault pattern and mechanics relative to existing and proposed ground surface.
4. Geophysical survey data.
5. Logs of exploratory trenches and borings.

### V. *Other Essential Data*

#### A. *Sources of data*

1. Reference material listed in bibliography.
2. Maps and other source data referenced.
3. Compiled data, maps, plates included or referenced.

#### B. *Vital support data*

1. Maximum credible earthquake.
2. Maximum probable earthquake.
3. Maximum expected bedrock acceleration.

#### C. *Signature and license number of geologist registered in California*

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CDMG NOTE

NUMBER 43

## RECOMMENDED GUIDELINES FOR DETERMINING THE MAXIMUM CREDIBLE AND THE MAXIMUM PROBABLE EARTHQUAKES

The following guidelines were suggested by the Geotechnical Subcommittee of the State Building Safety Board on 3 February 1975 to assist those involved in the preparation of geologic/seismic reports as required by regulations of the California Administrative Code, Title 17, Chapter 8, Safety of Construction of Hospitals. CDMG is currently using these guidelines when reviewing geologic/seismic reports.

### Maximum credible earthquake

The maximum credible earthquake is the maximum earthquake that appears capable of occurring under the presently known tectonic framework. It is a rational and believable event that is in accord with all known geologic and seismologic facts. In determining the maximum credible earthquake, little regard is given to its probability of occurrence, except that its likelihood of occurring is great enough to be of concern. It is conceivable that the maximum credible earthquake might be approached more frequently in one geologic environment than in another.

The following should be considered when deriving the maximum credible earthquake:

- (a) The seismic history of the vicinity and the geologic province;
- (b) the length of the significant fault or faults which can affect the site within a radius of 100 kilometers; (See CDMG Preliminary Report 13);

- (c) the type(s) of faults involved;
- (d) the tectonic and/or structural history;
- (e) the tectonic and/or structural pattern or regional setting (geologic framework);
- (f) the time factor shall not be a parameter.

### Maximum probable earthquake (functional-basis earthquake)

The maximum probable earthquake is the maximum earthquake that is likely to occur during a 100-year interval. It is to be regarded as a probable occurrence, not as an assured event that will occur at a specific time.

The following should be considered when deriving the "functional-basis earthquake":

- (a) The regional seismicity, considering the known past seismic activity;
- (b) the fault or faults within a 100 kilometer radius that may be active within the next 100 years;
- (c) the types of faults considered;
- (d) the seismic recurrence factor for the area and faults (when known) within the 100 kilometer radius;
- (e) the mathematic probability or statistical analysis of seismic activity associated with the faults within the 100 kilometer radius (the recurrence information should be plotted graphically);
- (f) the postulated magnitude shall not be lower than the maximum that has occurred within historic time.

PYA, JES, RWS 2.75







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CDMG NOTE

NUMBER 44

## RECOMMENDED GUIDELINES FOR PREPARING ENGINEERING GEOLOGIC REPORTS

The following guidelines are required for engineering geologic reports submitted to the Department of Public Works, County of Ventura. This information was originally printed in *California Geology*, November 1974. These guidelines are an example of "State-of-the-Art", and all the elements should be considered during the preparation and review of geologic reports. Item V was provided by the Southern California Section, Association of Engineering Geologists; the State Building Safety Board; and the California Division of Mines and Geology.

### I. GEOLOGIC MAPPING

A. Each report must be a product of independent geologic mapping of the subject area at an appropriate scale and in sufficient detail to yield a maximum return of pertinent data. In connection with this objective, it may be necessary for the geologist to extend his mapping into adjacent areas.

B. All mapping should be done on a base with satisfactory horizontal and vertical control—in general a detailed topographic map. The nature and source of the base map should be specifically indicated. For sub-divisions, the base map should be the same as that to be used for the tentative map or grading plan.

C. Mapping by the geologist should reflect attention to the lithology, structural elements, and three-dimensional distribution of the earth materials exposed or inferred within the area. In most hillside areas these materials will include both bedrock and surficial deposits. A clear distinction should be made between observed and inferred features and relationships.

D. A detailed large-scale map normally will be required for a report on a tract, as well as for a report on a smaller area in which the geologic relationships are not simple.

E. Where three-dimensional relationships are significant but cannot be described satisfactorily in words alone, the report should be accompanied by one or more appropriately positioned structure sections.

F. The locations of test holes and other specific sources of subsurface information should be indicated in the text of the report or, better, on the map and any sections that are submitted with the report.

### II. GENERAL INFORMATION

Each report should include definite statements concerning the following matters:

A. Location and size of subject area, and its general setting with respect to major geographic and geologic features.

B. Who did the geologic mapping upon which the report is based, and when the mapping was done.

C. Any other kinds of investigations made by the geologist and, where pertinent, reasons for doing such work.

D. Topography and drainage in the subject area.

E. Abundance, distribution, and general nature of exposures of earth materials within the area.

F. Nature and source of available subsurface information. Suitable explanations should provide any technical reviewer with the means for assessing the probable reliability of such data. (Sub-surface relationships can be variously determined or inferred, for example, by projection of surface features from adjacent areas, by the use of test-hole logs, and by interpretation of geophysical data, and it is evident that different sources of such information can differ markedly from one another in degree of detail and reliability according to the method used).

### III. GEOLOGIC DESCRIPTIONS

The report should contain brief but complete descriptions of all natural materials and structural features recognized or inferred within the subject area. Where interpretations are added to the recording of direct observations, the bases for such interpretations should be clearly stated.

The following check list may be useful as a general, though not necessarily complete, guide for descriptions:

A. Bedrock—igneous, sedimentary, metamorphic types.

1. Identification as to rock type (e.g., granite, silty sandstone, mica schist).
2. Relative age, and, where possible, correlation with named formations (e.g., Rincon formation, Vaqueros sandstone).
3. Distribution.
4. Dimension features (e.g., thickness, outcrop breadth, vertical extent).
5. Physical characteristics (e.g., color, grain size, nature of stratification, foliation, or schistosity, hardness, coherence).

6. Special physical or chemical features (e.g., calcareous or siliceous cement, concretions, mineral deposits, alteration other than weathering).

7. Distribution and extent of weather zones; significant differences between fresh and weathered rock.

8. Response to natural surface and near-surface processes (e.g., raveling, gullyng, mass movement).

B. Structural features—stratification, foliation, schistosity, folds, zones of contortion or crushing, joints, shear zones, faults, etc.

1. Occurrence and distribution.
2. Dimensional characteristics.
3. Orientation, and shifts in orientation.
4. Relative ages (where pertinent).
5. Special effects upon the bedrock. (Describe the conditions of planar surfaces).
6. Specific features of faults (e.g., zones of gouge and breccia, nature of offsets, timing of movements), are faults active in either the geological sense or the historical sense?

C. Surficial (unconsolidated) deposits—artificial (manmade) fill, topsoil, stream-laid alluvium, beach sands and gravels, residual debris, lake and pond sediments, swamp accumulations, dune sands, marine and nonmarine terrace deposits, talus accumulations, creep and slope wash materials, various kinds of slump and slide debris, etc.

1. Distribution, occurrence, and relative age; relationships with present topography.
2. Identification of materials as to general type.
3. Dimensional characteristics (e.g., thickness, variations in thickness, shape).
4. Surface expression and correlation with features such as terraces, dunes, undrained depressions, anomalous protruberances.
5. Physical or chemical features (e.g., moisture content, mineral deposits, content of expansible clay minerals, alteration, cracks and fissures, fractures).

(over)

6. Physical characteristics (e.g., color, grain size, hardness, compactness, coherence, cementation).

7. Distribution and extent of weathered zones; significant differences between fresh and weathered material.

8. Response to natural surface and near-surface processes (e.g., raveling, gullying, subsidence, creep, slope-washing, slumping and sliding).

#### D. Drainage—surface water and groundwater.

1. Distribution and occurrence (e.g., streams, ponds, swamps, springs, seeps, subsurface basins).

2. Relations to topography.

3. Relations to geologic features (e.g., previous strata, fractures, faults).

4. Sources and permanence.

5. Variations in amounts of water (e.g., intermittent springs and seeps, floods).

6. Evidence for earlier occurrence of water at localities now dry (e.g., vegetation, mineral deposits, historic records).

7. The effect of water on the properties of the in-place materials.

#### E. Features of special significance (if not already included in foregoing descriptions).

1. Features representing accelerated erosion (e.g., cliff reentrants, badlands, advancing gully heads).

2. Features indicating subsidence of settlement (e.g., fissures, scarplets, offset reference features, historic records and measurements).

3. Features indicating creep (e.g., fissures, scarplets, distinctive patterns of cracks and/or vegetation, topographic bulges, displaced or tilted reference features, historic records and measurements).

4. Slump and slide masses in bedrock and/or surficial deposits; distribution, geometric characteristics, correlation with topographic and geologic features, age and rates of movement.

5. Deposits related to recent floods (e.g., talus aprons, debris ridges, canyon-bottom trash).

6. Active faults and their recent effects upon topography and drainage.

## IV. THE BEARING OF GEOLOGIC FACTORS UPON THE INTENDED LAND USE

Treatment of this general topic, whether presented as a separate section or integrated in some manner with the geologic descriptions, normally constitutes the principal contribution of the report. It involves both (1) the effects of geologic features upon the proposed grading, construction, and land use, and (2) the effects of these proposed modifications upon future geological processes in the area.

The following check list includes the topics that ordinarily should be considered in submitting discussion, conclusions, and recommendations in the geologic reports:

A. General compatibility of natural features with proposed land use: Is it basically reasonable to develop the subject area?

1. Topography.
2. Lateral stability of earth materials.
3. Problems of flood inundation, erosion, and deposition.
4. Problems caused by features or conditions in adjacent properties.
5. Other general problems.

#### B. Proposed cuts.

1. Prediction of what materials and structural features will be encountered.

2. Prediction of stability based on geologic factors.

3. Problems of excavation (e.g., unusually hard or massive rock, excessive flow of groundwater).

4. Recommendations for reorientation or repositioning of cuts, reduction of cut slopes, development of compound cut slopes, special stripping above daylight lines, buttressing, protection against erosion, handling of seepage water, setbacks for structures above cuts, etc.

#### C. Proposed masses of fill.

1. General evaluation of planning with respect to canyon-filling and sidehill masses of fill.

2. Comment on suitability of existing natural materials for fill.

3. Recommendations for positioning of fill masses, provision for underdrainage, buttressing, special protection against erosion.

#### D. Recommendations for subsurface testing and exploration.

1. Cuts and test holes needed or additional geologic information.

2. Program of subsurface exploration and testing, based upon geologic considerations, that is most likely to provide data needed by the soils engineer.

#### E. Special recommendations:

1. Areas to be left as natural ground.
2. Removal or buttressing of existing slide masses.
3. Flood protection.
4. Protection from wave erosion along shorelines.
5. Problems of groundwater circulation.
6. Position of structures with respect to active faults.

## V. SEISMIC CONSIDERATIONS

The following published guidelines should be considered when preparing seismic information.

1. CDMG Note No. 37, "Guidelines to Geologic Seismic Reports".
2. CDMG Note No. 43, "Recommended Guidelines for Determining the Maximum Credible and the Maximum Probable Earthquakes".

## VI. DOCUMENTATION AND IMPLEMENTATION

A. The report should consider as the minimum requirement, Chapter 70, Uniform Building Code (1973) Refer to California Administration Code, Title 25, Section 1090, Excavation and Grading.

B. All material in the report should be relevant to the purpose of the report.

C. All statements should be documented by references or by accurate field observations.

D. Aerial photos (originals or suitable copies) should be included to document any discussion on landslides and faults.

E. The methods of field analysis should be discussed in a lucid manner.





## GUIDELINES FOR GEOLOGIC/SEISMIC CONSIDERATIONS IN ENVIRONMENTAL IMPACT REPORTS

The following guidelines were prepared by the Division of Mines and Geology with the cooperation of the State Water Resources Control Board to assist those who prepare and review environmental impact reports.

These guidelines will expedite the environmental review process by identifying the potential geologic problems and by providing a recognition of data needed for design analysis and mitigating measures. All statements should be documented by reference to material (including specific page and chart numbers) available to the public. Other statements should be considered as opinions and so stated.

### 1. CHECKLIST OF GEOLOGIC PROBLEMS FOR ENVIRONMENTAL IMPACT REPORTS

GEOLOGIC PROBLEMS		Could the project or a geologic event cause environmental problems?			Is this conclusion documented in attached reports?	
PROBLEM	ACTIVITY CAUSING PROBLEM	NO	YES	ENVIRONMENTAL PROBLEMS	NO	YES
EARTHQUAKE DAMAGE	Fault Movement					
	Liquefaction					
	Landslides					
	Differential Compaction/ Seismic Settlement					
	Ground Rupture					
	Ground Shaking					
	Tsunami					
	Seiches					
	Flooding					
	(Failure of Dams and Levees)					
LOSS OF MINERAL RESOURCES	Loss of Access					
	Deposits Covered by Changed Land-Use Conditions					
	Zoning Restrictions					
WASTE DISPOSAL PROBLEMS	Change in Groundwater Level					
	Disposal of Excavated Material					
	Percolation of Waste Material					
SLOPE AND/OR FOUNDATION INSTABILITY	Landslides and Mudflows					
	Unstable Cut and Fill Slopes					
	Collapsible and Expansive Soil					
	Trench-Wall Stability					
EROSION, SEDIMENTATION, FLOODING	Erosion of Graded Areas					
	Alteration of Runoff					
	Unprotected Drainage Ways					
	Increased Impervious Surfaces					
LAND SUBSIDENCE	Extraction of Groundwater, Gas, Oil, Geothermal Energy					
	Hydrocompaction - Heat Oxidation					
VOLCANIC HAZARDS	Lava Flow					
	Ash Fall					

## II. CHECKLIST OF GEOLOGIC REPORT ELEMENTS

REPORT ELEMENTS		yes	no
<b>A. General Elements Present</b>			
1. Description and map of project.		<input type="checkbox"/>	<input type="checkbox"/>
2. Description and map of site.		<input type="checkbox"/>	<input type="checkbox"/>
3. Description and map of pertinent off-site areas		<input type="checkbox"/>	<input type="checkbox"/>
<b>B. Geologic Element (refer to checklist)</b>			
1. Are all the geologic problems mentioned?		<input type="checkbox"/>	<input type="checkbox"/>
2. Are all the geologic problems adequately described?		<input type="checkbox"/>	<input type="checkbox"/>
<b>C. Mitigating Measures</b>			
1. Are mitigating measures necessary?		<input type="checkbox"/>	<input type="checkbox"/>
2. Is sufficient geologic information provided for the proper design of mitigating measures?		<input type="checkbox"/>	<input type="checkbox"/>
3. Will the failure of mitigating measures cause an irreversible environmental impact?		<input type="checkbox"/>	<input type="checkbox"/>
<b>D. Alternatives</b>			
1. Are alternatives necessary to reduce or prevent the irreversible environmental impact mentioned?		<input type="checkbox"/>	<input type="checkbox"/>
2. Is sufficient geologic information provided for the proper consideration of alternatives?		<input type="checkbox"/>	<input type="checkbox"/>
3. Are all the possible alternatives adequately described?		<input type="checkbox"/>	<input type="checkbox"/>
<b>E. Implementation of the Project</b>			
1. Is the geologic report signed by a registered geologist?*		<input type="checkbox"/>	<input type="checkbox"/>
2. Does the report provide the necessary regulations and performance criteria to implement the project?		<input type="checkbox"/>	<input type="checkbox"/>

\*Required for interpretive geologic information.

## III. PUBLISHED REFERENCES (selected)

<b>A. California Division of Mines and Geology Publications</b>			for determining the maximum credible and the maximum probable earthquakes. 1975.	California. 1965-1969 Bulletin of the Seismological Society of America. v. 61, no. 6
1. Alfors, J.T., et al., 1973. Urban geology master plan for California. Bulletin 198.	7. Note No. 44. Recommended guidelines for preparing engineering geologic reports. 1975			3. California Department of Water Resources, 1964. Crustal strain and fault movement investigation. Bulletin No. 116-2.
2. Greensfelder, R.W., 1974. Maximum credible rock acceleration from earthquakes in California. Map Sheet 23.	8. Note No. 45. Recommended guidelines for preparing mine reclamation plans. 1975.			4. Coffman J.L. and von Hake C.A. ed. 1973. Earthquake history of the United States. U.S. Department of Commerce, Publication 41-1
3. Jennings, C.W., 1973. Preliminary fault and geologic map. Preliminary Report 13.	<b>B. Other Publications</b>			5. _____, ed. 1974. United States earthquakes, 1972. U.S. Department of Commerce
4. Oakeshott, G.B., 1974. San Fernando, California, earthquake of 9 February 1971. Bulletin 196	1. Allen, C.R., et al., 1965. Relationship between seismicity and geologic structure in the southern California region. Bulletin of the Seismological Society of America, v. 55, no. 4			6. Hileman J.A. et al. 1973. Seismicity of the southern California region, 1 January 1932 to 31 December 1972. California Institute of Technology Contribution 2365
5. Note No. 37. Guidelines to geologic/seismic reports. 1973.	2. Bolt, B.A. and Miller, R.D., 1971. Seismicity of northern and central			
6. Note No. 43. Recommended guidelines				

## IV. PUBLIC AGENCIES WITH GEOLOGIC DATA

Source	Data Needed			
	Seismicity	Geology	Ground Water	Soils
Libraries and Geology and Engineering Departments of California Universities	X	X	X	X
California Institute of Technology	X			
California Division of Mines and Geology (Sacramento, San Francisco, Los Angeles, CA)	X	X		
California Department of Water Resources (Sacramento, CA)		X		X
California Department of Transportation (District Office )				X
County Soil & Water Conservation Districts				X
County Engineer and Departments of Building and Safety	X	X		X
County Highway Department				X
County Flood Control District				X
U.S. Geological Survey (Menlo Park, CA)		X		
U.S. Corps of Engineers (District Engineer)		X		
U.S. Bureau of Reclamation (Regional Offices)		X		
U.S. Soil Conservation Service and Forest Service				X





# CALIFORNIA DIVISION OF MINES AND GEOLOGY

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CDMG NOTE

NUMBER 47

## RECOMMENDED GUIDELINES FOR GEOLOGIC REPORTS ON OFFSHORE OPERATIONS AND FACILITIES

These guidelines were prepared at the request of the Resources Agency and at the suggestion of the California Energy Resources Conservation and Development Commission in order to provide adequate geologic/seismic information on outer continental shelf projects. The following guidelines, if used diligently, provide reasonable assurances that adequate geologic information will be included in geologic reports for offshore operations and facilities.

### PRELUDE

Science and technology have the capability to mitigate and/or prevent disasters related to offshore petroleum operation and related onshore facilities. Lucid and realistic requirements for detailed geologic studies should be mandatory. Because offshore geologic features and phenomena are similar to those encountered onshore in their potential for detrimental impact, detailed studies must be required for all drilling and production facilities and appurtenant structures and facilities. Inasmuch as offshore geologic features and phenomena are not only similar to, but often more fragile than, those onshore, it is apparent that such studies must be mandated. Geologic-related malfunctions and failures are difficult enough to control onshore where man is at home in his environment, but are much more difficult to control in the lesser known and often hostile marine environment.

It is important to thoroughly analyze the areas of petroleum operation. Submarine landslides or slumps can sever subsurface pipelines, damage or destroy drill or production sites, and offshore platforms. Unstable foundation materials at the site of proposed drilling platforms or around pipe lines could fail from settlement, subsidence, downslope creep, or landslide activity. Density and/or turbidity currents could possibly sever a pipe or utility line or impact and damage a drilling platform.

The 1971 San Fernando earthquake severely damaged onshore utility facilities. Similar failures in the offshore environment will be much more difficult to control and repair. Seismic shaking will occur in the offshore area as it does onshore. Because lurching, liquefaction, settlement, subsidence or landslide activity can be induced by seismic shaking, analysis of the potential for the characteristics of seismic shaking must precede design and construction. Shaking of an offshore platform during a major seismic event may cause damage greater than anticipated.

The types, length, and intensity of shaking should be taken into consideration prior to design and construction to prevent catastrophic losses.

The Santa Barbara oil spill of 1969 could have been prevented had a detailed engineering geology analysis of the type and condition of earth materials in the upper 1000 feet been required and mitigating engineering measures employed. The geologic site conditions precluded the use of the standard regulations regarding depth, type of casing, and drilling techniques. The geologic environment is non-uniform and thus standardized or cookbook regulations should only be used in conjunction with site provisions imposed after, and *only* after, a detailed analysis has been completed.

### I. INTRODUCTION

The following guidelines for geologic reports are recommended for all offshore petroleum exploration and production facilities. These guidelines were prepared in such a manner that they can be adapted, expanded, or modified to be usable for projects of varying size, scope, and complexity. California Division of Mines and Geology CDMG Notes #37, "Guidelines to Geologic/Seismic Reports," and #44, "Recommended Guidelines for Engineering Geologic Reports," are recommended for attendant onshore operations and facilities.

### II. THE INVESTIGATIONS

#### A. Regional analysis

An in-depth review of the regional geology and seismicity should be completed to establish the relationship of the project area or site to the geology and seismology of the region. This would be based on review of all pertinent maps, and technical literature and data. This would include but not be limited to:

1. General information
  - a. Description of project, type, location and size of project or subject area
  - b. Who prepared the report
  - c. Nature and sources of data

#### 2. Geology of region

- a. Regional bathymetry or submarine geomorphology. This should include a discussion of mode of and time relationship(s) of origin

- b. Structural and/or tectonic pattern(s)

- c. Relationship of regional structure and tectonic pattern(s) to those of the project area and those of the general California-Pacific Ocean area

- d. Seismicity of general area, including discussion of the historical earthquakes (approximately the last 200 years  $\pm$ )

- e. Regional faults including reference as to whether faults are active, potentially active, or inactive

- f. Sediment and rock materials. This should include but not be limited to reference to geometry, mode of origin, time of origin, morphological and volumetric changes with time and composition.

#### B. Site (or project) analyses

1. Site bathymetry or submarine geomorphology. This section should discuss the origin, hazards related to geomorphic features, slope gradients, effects of geomorphology on proposed project, etc.

2. Geologic structure with specific reference to geometry of rock units or structural units. This section should present the relationship of structural patterns to geologic hazards and their effect on the project.

3. Location of faults within site and those within 100 km that could effect the site or proposed projects. Faults should be designated active, potentially active, or inactive. Detailed history of activity for all active faults should be included.

4. Seismicity of site and area within 100 km of site. This section should present assumed effects of past and future seismicity upon the proposed project and a discussion of relationships between geologic hazards such as submarine land-

over



slides, liquefaction, settlement, density currents, and seismicity.

5. Sediment. For all facilities sited on (attached or placed) marine sediments, a detailed analysis should be completed which includes but is not limited to:

- a. Composition and chemistry of sediment
- b. Genesis of sediment
- c. Physical properties such as bearing value, cohesion, angle of internal friction
- d. Geometry of sediment
- e. Gradient(s) of upper surface
- f. Analysis of contact between sediment and underlying bedrock to determine if there is a potential for landsliding, settlement, density current, and downslope creep
- g. Potential for geologic hazard(s) related to sediment
- h. Relationship of potential for geologic hazard(s), and sediment characteristics to seismicity
- i. Relationship of potential for geologic hazard(s) to and from the proposed project or facilities

6. Analysis of bedrock

- a. Type and identification
- b. Relative age
- c. Distribution, structural pattern, dimension, geometry
- d. Physical characteristics (i.e. color, grain size, joint patterns, bedding or stratification, hardness)
- e. Special physical or chemical features
- f. Potential geologic hazards related to bedrock
- g. Effect of seismicity on the potential for geologic hazards
- h. Long and short term effect of proposed project or facilities on geologic materials

7. Hydrologic analysis

- a. Local and regional tidal ranges and periods
- b. Local and regional current characteristics including directions, velocities, and seasonal variations
- c. Prevailing and storm swell and wave conditions including heights, directions, and seasonal variations
- d. Potential for submarine scour
- e. Salinity, temperature, and density determinations as they have an impact on disposal of waste material
- f. Potential for and character (period, etc.) of seismically induced water movement (tsunami, seiche, etc.) at the project site

C. Impact of geologic factors upon the intended land use

An in-depth analysis of the effect of the proposed project on the geologic environment and, conversely, the effect of the geologic environment on the proposed project should be a mandatory portion of all geologic reports related to offshore exploration, development, production, and transmission. This section should include but not be limited to:

1. Relative stability of all geologic materials under natural conditions and under conditions introduced by the proposed project
2. Designation of appropriate mitigating measures where facilities are to be placed on foundation material that may be susceptible to landslides, slumps, or other unstable conditions
3. Potential for seismic activity
4. Potential for submarine landslides, liquefaction, creep, settlement, density, or turbidity currents and other geologic related hazards
5. Lucid discussion of proposed mitigating procedures and/or alternatives

6. Discussion of future studies that may be required during design and construction

7. Discussion of proposed methods of inspection and control during exploration, construction, and maintenance

8. Procedures describing the disposal of waste material from drilling operations

9. Discussion of the material excavated for the placement of footings and trenches, including the volume, location, and manner of excavation and disposal of waste material

10. Discussion of quantity and location of mineral resources, including metallic and nonmetallic minerals, affected by the proposed project and the temporary or permanent effects of the project on potential mineral resources

III. IMPLEMENTATION

A. All geologic information should be plotted on bathymetric (submarine topographic) maps and cross-sections (where appropriate on scales suitable for its intended use(s)).

B. Geologic data should be documented as to sources of resource information utilized (including geophysical surveys, core logs, and well logs).

C. Plans for permanent offshore structures should include provisions for strong-motion and seismograph instruments to record the effect of ground shaking on the structures and the possible effect of production operations on the seismicity

D. Measuring devices designed to monitor settlement and horizontal movement of the foundation due to geologic processes could be planned for and located on suitable maps.



# CALIFORNIA DIVISION OF MINES AND GEOLOGY

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CDMG NOTE

NUMBER 43

## CHECKLISTS FOR THE REVIEW OF GEOLOGIC/SEISMIC REPORTS

The following checklists, "Review of the Geologic Data" and "Review of the Seismic Data", were prepared for the purpose of determining the adequacy of geologic/seismic hospital site reports that are prepared by consulting engineering geologists, submitted to the Office of Architecture and Construction, and reviewed by the Division of Mines and Geology. This review procedure is required by regulations of the California Administrative Code, Title 17, Chapter 8, Safety of Construction of Hospitals. In addition, CDMG Notes 37 and 43, which are referred to in the regulations, provide guidelines on the preparation of geologic/seismic reports.

### A. REVIEW OF THE GEOLOGIC DATA

Project \_\_\_\_\_ Location \_\_\_\_\_ File No. \_\_\_\_\_

Reviewed By \_\_\_\_\_ Date Reviewed \_\_\_\_\_ Review No. \_\_\_\_\_

SUPPORT DATA	REVIEW OF REPORT INDICATES THAT		COMMENT
	Report is acceptable	Additional data needed	
1. Surface geologic information and map (minimum scale map 1:24,000)			
2. Subsurface geologic information and map (detailed geologic cross-section)			
3. Faults mapped within or adjacent to site			
4. Magnitude and distance of all relevant faults within 100-km radius			
5. Potential for liquefaction (ground water and soil condition)			
6. Potential for seismic settlement and differential compaction			
7. Potential for landsliding			
8. Potential for earthquake-induced flooding			
9. Potential for tsunamis			
10. Potential for seiches			
11. Bibliography			
12. Report prepared or signed by Engineering Geologist certified in California			
13. If the site is within an Alquist-Priolo Special Studies Zone, was the study conducted in accordance with the procedures established by local government?			
14. Has the City or County Seismic Safety and Safety Element of the General Plan been considered during the preparation of this report?			
15. Has the engineering geologist indicated that he visited the site and verified the support data?			

## B. REVIEW OF THE SEISMIC DATA

Project \_\_\_\_\_ Location \_\_\_\_\_ File No. \_\_\_\_\_

Reviewed By \_\_\_\_\_ Date Reviewed \_\_\_\_\_ Review No. \_\_\_\_\_

SUPPORT DATA	REVIEW OF REPORT INDICATES THAT			COMMENT
	Report is acceptable	Additional data needed	Endorsed (Yes or No)	
1. Location of site (latitude and longitude)				
2. Maximum credible earthquake				
3. Maximum credible rock acceleration*				
4. Maximum probable earthquake				
5. Maximum probable rock acceleration*				
6. Potential for liquefaction				
7. Potential for ground lurching and amplification				
<p>*Required for dynamic analysis considerations on foundation and structural stability.  **Refers to ground acceleration as stated in the Opinion No. CV 73/204, 7/11/74, of the Office of the Attorney General.</p>				





# CALIFORNIA DIVISION OF MINES AND GEOLOGY

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## CDMG NOTE

## NUMBER 49

### GUIDELINES FOR EVALUATING THE HAZARD OF SURFACE FAULT RUPTURE

These guidelines are to assist geologists who investigate faults relative to the hazard of primary surface rupture. Subsequent to the passage of the Alquist-Priolo Special Studies Zones Act (1972), it has become apparent that fault investigations conducted in California are frequently incomplete or otherwise inadequate for the purpose of evaluating the potential of surface fault rupture. It is further apparent that statewide standards for investigating faults do not exist.

The investigation of sites for the possible hazard of surface fault rupture is a deceptively difficult geologic task. Many active faults are complex, consisting of multiple breaks. Yet, the evidence for identifying active fault traces is generally subtle or obscure and the distinction between recently active and long-inactive faults may be difficult to make. Once a structure is sited astride an active fault, the resulting fault-rupture hazard cannot be mitigated unless the structure is re-located, whereas when a structure is placed on a landslide, the hazard from landsliding often can be mitigated. Further, it is impractical from an economic, engineering, and architectural point of view to design a structure to withstand serious damage under the stress of surface fault rupture. Thus, the evaluation of a site for the hazard of surface fault rupture is a difficult and delicate procedure.

Because of the complexity of evaluating surface and near surface faults and because of the infinite variety of site conditions, no single investigative method will be the best, or even useful, at all sites. Nonetheless, certain investigative methods are more helpful than others in locating faults and evaluating the recency of activity.

The evaluation of a given site with regard to the potential hazard of surface fault rupture is based extensively on the concepts of recency and recurrence of faulting along existing faults. In a general way, the more recent the faulting the greater the probability for future

faulting (Ziony and others, 1973). Stated another way, faults of known historic activity during the last 200 years, as a class, have a greater probability for future activity than faults classified as Holocene age (last 11,000 years) and a much greater probability of future activity than faults classified as Quaternary age (last 2-3 million years). Moreover, future faulting generally is expected to recur along pre-existing faults (Bonilla, 1970, p. 68). No doubt there are and will be exceptions to this, because it is not possible to predict the precise surface location of a new fault where none existed before.

As a practical matter, fault investigations should be directed at the problem of locating existing faults and then attempting to evaluate the recency of their activity. It is pointed out that data are obtained both from the site and outside the site area. The most direct method of evaluating recency is to observe (e.g. in a trench or road cut) the youngest geologic unit faulted and the oldest unit that is not faulted. Recently active faults also may be identified by direct observation of young, fault-related topographic features in the field, on aerial photographs, or on remotely obtained images. Other indirect and more interpretive methods are identified in the outline below. Some of these methods are discussed in Taylor and Cluff (1973), Sherard and others (1974), Stiemmons (1972), Bonilla (1970), and Wesson and others (1975), but no comprehensive manual on the subject of fault investigation and evaluation exists at this time. Other specific and general guidelines on fault investigations and evaluations are listed in the Selected References below.

The following annotated outline provides guidelines for a complete fault investigation that may be applied to any project site, large or small. Fault investigations may be conducted in conjunction with other geotechnical investigations (see CDMG Notes 37 and 44). Although not

all investigative techniques need or can be employed in evaluating a given site, the outline provides a check-list for preparing complete and well-documented reports. Since most reports on fault investigations are filed with and reviewed by local or State government agencies, it is necessary that the reports be adequately documented and carefully written to facilitate that review. The importance of the review process is stressed here, because it is the reviewer who must evaluate the adequacy of reports, interpret or set standards where they are unclear, and advise the governing agency as to their acceptability.

The scope of the investigation is dependent not only on complexity and

economics of a project, but also on the level of risk acceptable for the proposed structure or development (Joint Committee on Seismic Safety, 1974, p. 9). Obviously, a more detailed investigation should be made for hospitals, high-rise buildings, and other critical or sensitive structures than for low-density structures such as wood-frame dwellings that are comparatively safe. The conclusions drawn from any given set of data, however, must be consistent and unbiased. Recommendations must be clearly separated from conclusions, since recommendations are not totally dependent on geologic factors. The final decision as to whether, or how, a given project should be developed lies in the hands of the owner and the governing body that must review and approve the project.

### Suggested Outline for Geologic Reports on Faults

The following subjects should be addressed, or at least considered, in any geologic report on faults. Some of the investigative methods listed below should be carried out well beyond the site being investigated. However, it is not expected that all of the methods identified would be used in a single investigation.

#### I. Text

##### A. Purpose and scope of investigation

##### B. Geologic setting

C. Site description and conditions. Include information on geologic units, graded and filled areas, vegetation, existing structures, etc., that may affect the choice of investigative methods and the interpretation of data.

##### D. Methods of investigation

1. Review of published and unpublished literature and records concerning geologic units, faults, ground-water barriers, etc.

2. Interpretation of aerial photographs and other remotely sensed images to detect fault-related topography, vegetation and soil contrasts, and other lineaments of possible fault origin.

3. Surface observations, including mapping of geologic units and structures, topographic features, springs, deformation of man-made structures, etc., both on and beyond the site.

##### 4. Subsurface investigations

a. Trenching and other extensive excavations to permit detailed and direct observation of continuously exposed geologic units and features which must be carefully logged (see Taylor and Cluff, 1973).

b. Springs and test pits to permit collection of data on geologic units and ground water at specific locations. Data points must be sufficient in number and adequately spaced to permit valid correlations and interpretations.

5. Geophysical investigations. These are indirect methods that require a knowledge of specific geologic conditions for reliable interpretations. They should seldom, if ever, be employed alone without knowledge of the geology. Geophysical methods alone never prove the absence of a fault, nor do they identify the tendency of an active fault. The types of equipment and techniques used should be described.



- a. Seismic refraction
  - b. Magnetic intensity
  - c. Other (e.g. electrical resistivity, seismic reflection, gravity)
6. Other methods should be included when special conditions permit, or requirements for critical structures demand, a more intensive investigation.
- a. Aerial reconnaissance overflights.
  - b. Geodetic and strain measurements, microseismicity monitoring, or other monitoring techniques.
  - c. Radiometric analysis (e.g. C14, K-Ar), stratigraphic correlation (fossils, mineralogy), soil profile development, paleomagnetism (magnetostratigraphy), or other age-dating techniques to identify the age of faulted or unfaulted units or surfaces.

#### E. Conclusions

- 1. Location and existence (or absence) of hazardous faults on or adjacent to the site.
- 2. Type of faults and nature of anticipated offset: direction of relative displacement, and maximum displacement that is possible.
- 3. Probability of or relative potential for future surface displacement. The likelihood of future ground rupture can seldom be stated mathematically, but may be stated in semiquantitative terms such as low, moderate, or high.
- 4. Degree of confidence in and limitations of data and conclusions.

#### F. Recommendations

- 1. Set-back distances from hazardous faults, if appropriate. State and local law may dictate minimum standards (e.g. see Hart, 1975).
- 2. Need for additional studies.
- 3. Risk evaluations relative to the proposed development--opinions are acceptable. But remember that the ultimate decision as to whether the risk is acceptable lies with the governing body.

#### II. References

- A. Literature and records cited and reviewed.
- B. Aerial photographs or images interpreted--list type, scale, source, index numbers, etc.
- C. Other sources of information including well records, personal communications, and other data sources.

#### III. Illustrations--these are essential to the understanding of the report and to reduce the length of text.

- A. Location map--identify site locality, significant faults, geographic features, seismic epicenters, and other pertinent data; 1:24,000 scale is recommended.
- B. Site development map--show site boundaries, existing and proposed structures, graded areas, streets, exploratory trenches, borings, geophysical traverses, and other data; recommended scale is 1 inch equals 200 feet, or larger.

- C. Geologic map--shows distribution of geologic units (if more than one), faults and other structures, geomorphic features, aerial photo lineaments, and springs; on topographic map 1:24,000 scale or larger; can be combined with III (A) or III (B).
- D. Geologic cross-sections, if needed to provide 3-dimensional picture.
- E. Logs of exploratory trenches and borings--show details of observed features and conditions; should not be generalized or diagrammatic.
- F. Geophysical data and geologic interpretations.
- IV. Appendix--supporting data not included above (e.g. water well data).
- V. Signature and registration number of investigating geologist.

### Selected References

- Association of Engineering Geologists, 1973, *Geology and earthquake hazards -- Planners guide to the seismic safety element: AEG, Southern California Section*, 44 p. (See Section II on Evaluating the Problem.)
- Bonilla, M.G., 1970, Surface faulting and related effects in Wiegel, R.L. (Edit.), *Earthquake Engineering*, Prentice-Hall, Inc., Englewood Cliffs, N.J., p. 47-74. (Contains an extensive bibliography on surface faulting, fault patterns and types, width of fault zones, creep, etc.)
- California Division of Mines and Geology, 1973, *Guidelines to geologic and seismic reports*; CDMG Notes 37.
- California Division of Mines and Geology, 1975, *Recommended guidelines for preparing engineering geologic reports*, CDMG Note 44.
- Hart, E.W., 1975, *Fault hazard zones in California: California Division of Mines and Geology, Special Publication 42*, 37 p. (revised yearly; information on state law and zoning program for regulating development near hazardous faults).
- Joint Committee on Seismic Safety, California Legislature, 1974, *Meeting the earthquake challenge: California Division of Mines and Geology, Special Publication 45*, 223 p.
- Sherard, J.L., Cluff, L.S., and Allen, C.R., 1974, *Potentially active faults in dam foundations: Geotechnique*, v. 24, no. 3, p. 367-428, Institute of Civil Engineers, London.
- Slemmons, D.B., 1972, *Microzonation for surface faulting in Proceedings of the International Conference on Microzonation*, Seattle, Washington, October 30 - November 3, 1972, p. 348-361.
- Taylor, C.L., and Cluff, L.S., 1973, *Fault activity and its significance assessed by exploratory excavation in Proceedings of the Conference on Tectonic Problems of the San Andreas Fault System: Stanford University Publication, Geological Sciences*, v. XIII, September 1973, p. 239-247.
- Wallace, R.E., 1975, *Fault scarp geomorphology and seismic history, north-central Nevada (abstract): Geological Society of America, Cordilleran Section, 71st Annual Meeting -- Abstract with Programs*, v. 7, no. 3, p. 385.
- Wesson, R.L., Hellev, E.J., Lajoie, K.R., and Wentworth, C.M., 1975, *Faults and future earthquakes in Studies for Seismic Zonation of the San Francisco Bay region: U.S. Geological Survey Professional Paper 941-A*, p. A5-A30.
- Ziony, J.I., Wentworth, C.M., and Buchanan, J.M., 1973, *Recency of faulting: A widely applicable criterion for assessing the activity of faults: World conference on Earthquake Engineering, Fifth (June 1973), Rome, Italy*, p. 1680-1683.



PLANNING DEPARTMENT

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GUIDELINES FOR GEOLOGIC REPORTS

Planning Director

## I. SITE DATA AND IDENTIFICATION

## A. PROJECT DESCRIPTION

1. Describe various land uses and structures planned.
2. Size and relation to surrounding area.

## B. LOCATION

1. In general geographic and geological terms.
2. Include regional topographic map at scale  
1"=2000' (7½ Minute U.S.G.S. Topo.).

## II. PURPOSE

- A. The purpose should clearly indicate the uses for which the report was prepared. If necessary, a statement of excluded uses may be included in the purpose.
- B. Indicate commissioning party or organization (e.g., include cover letter).

## III. SCOPE

- A. State the scope of geologic studies included, (e.g., "preliminary studies for project feasibility and to identify geologic hazards", "final geologic map and testing and analysis for the grading plan").
- B. Supplemental reports must refer to previous reports indicating author or authors, firm and dates of each report.
- C. List the methods of investigation and the professional firms and individuals who participated.
- D. If the level of investigation varies within the site, state and show on the geologic map the areas of concentration or exclusion of data, and the reason (e.g., "The southwest approximately 25 acres, shown as 'excluded from development' on figure 1, is partly landslide not suitable for development."
- E. Indicate approximate person-hours spent in field work and by whom.

#### IV. THE INVESTIGATION

##### A. REGIONAL REVIEW

A review of the seismic or earthquake history of the region should establish the relationship of the site primarily on review of existing maps and technical literature and would include:

1. Major earthquakes during historic time and epicenter locations and magnitudes, near the site.
2. Location of any major or regional fault traces affecting the site being investigated, and a discussion of the tectonic mechanics and other relationships of significance to the proposed construction.
3. Major landslides, episodes of liquefaction, and history of slope instabilities in the immediate vicinity of the project.

##### B. SITE SPECIFIC GEOLOGY

The geologic features and conditions on the site should be described in a degree of detail compatible with the type of development and the geologic complexity. The investigation should include the following techniques and methods of investigation:

1. Topography and elements of regional geology located on site.
2. Interpretation of aerial photographs and remote sensing images.
  - a. Indicate date; scale; whether color, black and white, or infrared; vertical or oblique; stereo pairs or not; spectral bands.
  - b. Sequential photos (if available); note changes with time, if any.
  - c. Source of photos and photography numbers.
3. History of site and adjacent area problems from discussions with local residents and officials.
4. Geologic Mapping
  - a. Topographic base map with contour and scale interval sufficient to show important details, generally from tentative or parcel map, with cultural detail as required on tentative map.
  - b. Indicate base geologic map used, date, and significant additions and modifications to base map, with revision dates.
  - c. Features must be shown with an accuracy commensurate with map scale and the purpose of the investigation.

5. Geologic Units

a. Rock Descriptions

- i) Bedrock units
- ii) Surficial deposits (colluvium, soils, landslide, etc.)

b. Structure

- i) Folds, faults, regional dips

c. Lithologic and structural details

- i) Joints, cleavage, schistosity
- ii) Bedding and cross-bedding
- iii) Weathering features (i.e., depth, blocky fracture, etc.)

6. Faults

a. Direct Evidence

- i) Description of exposures

b. Indirect Evidence

- i) Aerial photo interpretation, lineations, geomorphic features, slope changes, etc.

7. Geophysical Investigations

- a. Geophysical investigation alone does not ordinarily constitute geological investigation. It supplements geologic and soil data. Magnetometer lines alone are not sufficient evidence to prove or disprove the existence or location of faults.

- b. Geophysical investigations should be used primarily to determine where to look for details by other means, and when surface geologic features are concealed. With careful control from borings and exposures, they may reduce field investigation time.

- c. Display geophysical data on topographic and geologic map and profiles. Show cultural features which affect the data.

8. Drill-Hole Data

- a. Specific investigative methods; drilling equipment, tests, and groundwater measurements.
- b. If necessary, use dual classification--Unified soil classification for soils, geologic description in parentheses for units other than alluvium. Describe lithology and durability including probable changes on exposure, from undisturbed samples.
- c. Sampling of geologic units should be at the critical contacts and times; soil engineering borings should supplement geologic data.



9. Test Pits and Trenches

Test pits and trenches commonly provide the only large-scale subsurface data. They should be logged in the scale and detail commensurate with field features, including detailed insets if necessary.

10. Field and Laboratory Tests

Soil tests can be used for geologic purposes. In addition, samples for specifically geologic purposes should be considered, such as clast identification and isotopic and other dating.

11. Inclinator and Piezometer

Installation should be considered where long-term stability is questionable. The report must state the length of time they are to be monitored, by whom, and final responsibility to care for and to dispose of the installations.

12. Groundwater Studies

- a. Location of springs (including intermittent).
- b. Water table fluctuations, perched water tables.
- c. Seasonal and permanent contained aquifers.
- e. Relationship of water tables to leaching devices, building sites, etc.

VI. CONCLUSIONS AND RECOMMENDATIONS

A. ANALYSIS AND SUMMATION OF GEOLOGIC DATA--should include as a minimum:

1. Surface Rupture Along Faults

- a. Age, type of surface displacement, and amount of reasonable anticipated future displacements of any faults within or immediately adjacent to the site.
- b. Definition of any areas of high risk.

2. Secondary Ground Effects

- a. Estimated magnitude and distance of all relevant earthquakes.
- b. Lurching and shallow ground rupture.
- c. Liquefaction of sediments and soils.
- d. Settlement of soils.
- e. Potential for earthquake-induced landslide.

3. Analysis of Slope Stability Under Non-Seismic Conditions

- a. Stability of natural slopes.
- b. Effect of the proposed projects on the stability.
- c. Potential for encroachment on the site of slope features occurring off the parcel.

4. Other Potential Geologic Hazards

- a. Tsunamis.
- b. Surface flooding.
- c. Subsidence, and other types of settlement.
- d. Disruption of normal geologic processes by the project, (i.e., disruption of sediment supply to littoral zone, etc.)

B. Statement on compatibility of type of land use and geologic conditions.

C. Mitigation measures for reduction of hazard, and the degree of protection offered by each. May include:

1. Grading specifications.
2. Foundation design specifications.
3. Set-backs (minimum set-backs from active and potentially active faults: 50' for most structures; 100' for high-occupancy structures and critical facilities.
4. Drainage control plans.
5. Retaining walls.
6. Leach field location.

VII. REFERENCES

- A. Bibliography adequately referencing all data and conclusions.
- B. Appropriate signatures and registration numbers of professionals preparing reports.

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## APPENDIX 4

### GEOLOGIC STABILITY OF BLUFFTOP DEVELOPMENT

Section 30253 of the 1976 Coastal Act provides that "New development shall: (1) Minimize risks to life and property in areas of high geologic, flood and fire hazard; (2) Assure stability and structural integrity, and neither create nor contribute significantly to erosion, geologic instability, or destruction of the site or surrounding area or in any way require the construction of protective devices that would substantially alter natural landforms along bluffs and cliffs". Section 30251 provides that: "Permitted development shall be sited and designed...to minimize the alteration of natural landforms..."

A bluff or cliff is a scarp or steep face of rock, decomposed rock, sediment or soil resulting from erosion, faulting, folding or excavation of the land mass. The cliff or bluff may be simple planar or curved surface or it may be steplike in section. For the purposes of this guideline, "cliff" or "bluff" is limited to those features having vertical relief of ten feet or more, and "seacliff" is a cliff whose toe is or may be subject to marine erosion. "Bluff edge" or "cliff edge" is the upper termination of a bluff, cliff or seacliff. When the top edge of the cliff is rounded away from the face of the cliff as a result of erosional processes related to the presence of the steep cliff face, the edge shall be defined as that point nearest the cliff beyond which the downward gradient of the land surface increases more or less continuously until it reaches the general gradient of the cliff. In a case where there is a steplike feature at the top of the cliff face, the landward edge of the topmost riser, shall be taken to be the cliff edge.

To meet the requirements of the act, bluff and cliff developments must be sited and designed to assure stability and structural integrity for their expected economic lifespans while minimizing alteration of natural landforms. Bluff and cliff developments (including related storm runoff, foot traffic, site preparation, construction activity, irrigation, waste water disposal and other activities and facilities accompanying such development) must not be allowed to create or contribute significantly to problems of erosion or geologic instability on the site or on surrounding geologically hazardous areas.

Alteration of cliffs and bluff tops, faces, or bases by excavation or other means should be minimized. Cliff retaining wall should be allowed only to stabilize slopes, or sea walls or sea walls at the toe of seacliffs or to check marine erosion where there is no less environmentally-damaging alternative and when required:

- (1) to maintain public recreational areas or necessary public services (such as protection of coastal highways or energy facility) or to protect port areas;

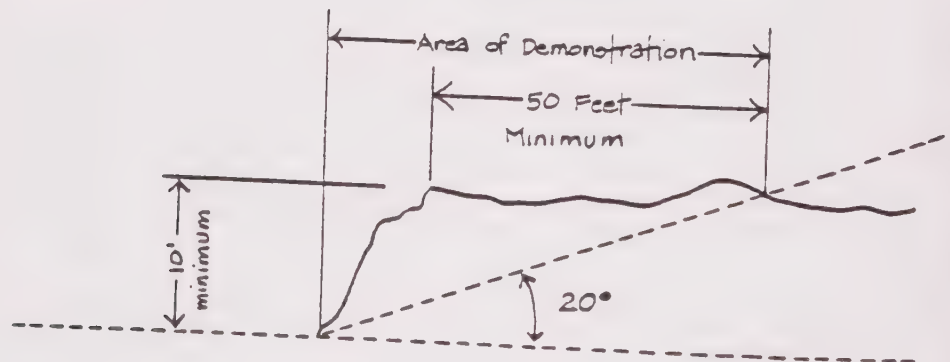
(2) to protect principle structures in existing developments that are in danger from erosion; or

(3) in Los Angeles, Orange, and San Diego Counties, to infill small sections of wall in subdivisions where a predominant portion of a wall is already in place, provided that such infilling would have no substantial adverse environmental effects.

A geologic investigation and report will be required when a development is proposed to be sited within the area of demonstration as defined below.

As a general rule, the area of demonstration of stability (Illustration A) includes the base, face and top of all bluffs and cliffs. The extent of the bluff top considered should include the area between the face of the bluff and a line described on the bluff top by the intersection of a plane inclined at a  $20^{\circ}$  angle from horizontal passing through the toe of the bluff or cliff, or 50 feet inland from the edge of the cliff or bluff, whichever is greater. However, the Commission may designate a lesser area of demonstration in specific areas of known geologic stability (as determined by adequate geologic evaluation and historic evidence) or where adequate protective works already exist. The Commission may designate a greater area of demonstration or exclude development entirely in areas of known high instability.

The report should indicate the location of the cliff or bluff edge, the toe of the cliff or bluff and other significant geologic features by distance from readily identified fixed monuments such as the centerline of the road nearest the bluff or cliff.





The applicant for a permit for blufftop development should be required to demonstrate that the area of demonstration is stable for development and that the development will not create a geologic hazard or diminish the stability of the area. The applicant should file a report evaluating the geologic conditions of the site and the effect of the development prepared by a registered geologist or professional civil engineer with expertise in soils or foundation engineering, or by a certified engineering geologist. The report should be based on an on-site investigation in addition to a review of the general character of the area. Where there is a dispute over the adequacy of the report, the Commission may request that the report be reviewed by a state geologist from the Division of Mines and Geology, the costs of that review and any necessary site inspections to be borne by the applicant. The report should consider, describe and analyze the following:

- (1) cliff geometry and site topography, extending the surveying work beyond the site as needed to depict unusual geomorphic conditions that might affect the site;
- (2) historic, current and foreseeable cliff erosion, including investigation of recorded land surveys and tax assessment records in addition to the use of historic maps and photographs where available and possible changes in shore configuration and sand transport;
- (3) geologic conditions, including soil, sediment and rock types and characteristics in addition to structural features, such as bedding, joints, and faults;
- (4) evidence of past or potential landslide conditions, the implications of such conditions for the proposed development, and the potential effects of the development on landslide activity;
- (5) impact of construction activity on the stability of the site and adjacent area;
- (6) ground and surface water conditions and variations, including hydrologic changes caused by the development (i.e. introduction of sewage effluent and irrigation water to the ground water system; alterations in surface drainage);
- (7) potential erodibility of site and mitigating measures to be used to ensure minimized erosion problems during and after construction (i.e. landscaping and drainage design);
- (8) effects of marine erosion on seacliffs;
- (9) potential effects of seismic forces resulting from a maximum credible earthquake;
- (10) any other factors that might affect slope stability.

The report should evaluate the off-site impacts of development (e.g. development contributing to geological instability on access roads) and the additional impacts that might occur due to the proposed development (e.g. increased erosion along a footpath). The report should also detail mitigation measures for any potential impacts and should outline alternative solutions. The report should express a professional opinion as to whether the project can be designed so that it will neither be subject to nor contribute to significant geologic instability throughout the lifespan of the project. The report should use a currently acceptable engineering stability analysis method and should also describe the degree of uncertainty of analytical results due to assumptions and unknowns. The degree of analysis required should be appropriate to the degree of potential risk presented by the site and the proposed project.

In areas of geologic hazard, the Commission may require that a development permit not be issued until an applicant has signed a waiver of all claim against the public for future liability or damage resulting from permission to build. All such waivers should be recorded with the County Recorder's Office.

Adopted May 3, 1977

PARAPET ORDINANCE  
ADOPTED BY  
SAN FRANCISCO IN 1969

FILE NO 548-68      ORD. NO. —  
AMENDING THE BUILDING CODE BY  
ADDING ARTICLE 2.5 THERETO RE-  
LATING TO ABATEMENT OF HAZ-  
ARDOUS PARAPETS AND BUILDING  
APPENDAGES IN SAN FRANCISCO  
AND SETTING THE EFFECTIVE DATE  
THEREFOR.

Be it ordained by the People of  
the City and County of San Francis-  
co:

Section 1. Part II, Chapter I of the  
San Francisco Municipal Code  
(Building Code) is hereby amended  
by adding Article 2.5 thereto to read  
as follows:

ARTICLE 2.5  
PARAPETS AND APPENDAGES  
HAZARD ABATEMENT

Sec. 251. Inspection of parapets  
and appendages. Every parapet or  
appendage which is supported on or  
attached to an exterior wall of a  
building adjacent to a property line,  
passageway or open courtyard, or  
public way, or which occurs in any  
other location where failure of such  
parapet or appendage would be a  
hazard to life or limb in such areas  
shall be subject to inspection by the  
Bureau of Building Inspection.

The provisions of this section are  
retroactive and shall apply to, and  
including, existing buildings as that  
term is defined in Section 402.2.21 of  
this Code.

Sec. 252. Definitions. Except where  
the context otherwise requires, the  
terms used in this Article shall have  
the meanings given to them in this  
section.

(a) **Appendage.** A cornice, a piece  
of ornamental statuary, a tank, or  
similar piece of ornamentation or  
equipment.

(b) **Parapet.** That portion of the  
wall of a building extending upward  
from the point of anchorage to the  
roof framing system.

Sec. 253. Procedure for correction  
of hazardous parapets and append-  
ages. Whenever the Bureau of Build-  
ing Inspection determines by inspec-  
tion that an existing parapet or ap-  
pendage which is within the scope  
of this Article, as indicated in Sec-  
tion 251 hereof, is not adequate to  
resist the lateral forces due to  
earthquake designated in Article 23  
of this Code which was in effect on  
July 1, 1969, the Superintendent of  
Building Inspection shall, by written  
notice to the owner or person or  
agent in charge of the building, de-  
signate and describe the inadequac-  
ies involved and direct that neces-  
sary steps be taken to eliminate the  
hazard.

Upon receipt of such notice, the  
owner or person or agent in control  
of the building where such hazard-  
ous parapet or appendage exists,  
shall:

A. Within one year from the date  
of receipt of such notice:

1. Submit to the Bureau of Build-  
ing Inspection an acceptable plan or  
procedure for the elimination of the  
hazardous condition. Plans or proce-  
dures shall be submitted in writing  
and shall have the intent of remov-  
ing the hazardous parapet or ap-  
pendage where this is not prohibited  
by provisions of this Code, or of re-  
constructing and/or bracing such  
parapet or appendage so that it will  
conform with the structural require-  
ments of this Code.

2. Obtain the necessary alteration  
permit in accordance with the proce-  
dures set forth in Article 3 of this  
Code.

B. Within one year after obtaining  
the alteration permit, complete all  
work indicated on the approved  
plans or procedures. This time limit  
may be extended by written agree-  
ment with the Superintendent of the  
Bureau of Building Inspection for  
one additional year.

Sec. 254. Variance procedure:  
Board of Examiners. Any person re-  
ceiving a notice as set out in Sec-  
tion 253 hereof may appeal for a  
variance from the notice of the Bu-  
reau to the Board of Examiners in  
the manner provided by Sec. 204.A,  
Paragraph 2, of this Code.

Section 2. **Effective date.** The ef-  
fective date of this ordinance shall  
be July 1, 1969.

I hereby certify that the foregoing  
ordinance was passed for second  
reading by the Board of Supervisors  
of the City and County of San Fran-  
cisco at its meeting of March 17,  
1969.

ROBERT J. DOLAN, Clerk  
March 22, 1969—lt

NOTICE OF FINAL PASSAGE

FILE NO. 548-68      ORD. NO. 112-69  
AMENDING THE BUILDING CODE BY  
ADDING ARTICLE 2.5 THERETO RE-  
LATING TO ABATEMENT OF HAZARD-  
OUS PARAPETS AND BUILDING AP-  
PENDAGES IN SAN FRANCISCO AND  
SETTING THE EFFECTIVE DATE  
THEREFOR.

I hereby certify that the foregoing  
ordinance was read for the second  
time and finally passed by the Board  
of Supervisors of the City and Coun-  
ty of San Francisco at its meeting of  
March 24, 1969.

ROBERT J. DOLAN, Clerk  
Approved: April 3, 1969.

JOSEPH L. ALIOTO, Mayor  
Apr. 9, 1969—lt



## GLOSSARY

Epicenter: That point on the earth's surface directly above the point of origin of an earthquake.

Geologic surveys: The use of one or more techniques of physical measurement to explore earth properties and processes.

Hazardous building: Building considered unsafe owing to poor design, poor construction techniques or material, defects in foundation conditions or damage from any one of several possible causes.

Intensity: A subjective measure of the force of an earthquake at a particular place as determined by its effects on persons, structures, and earth materials. The principle scale used in the United States today is the Modified Mercalli as Modified by Richter in 1956 and rearranged. (See Table.)

Magnitude: The rating of a given earthquake is defined as the logarithm of the maximum amplitude on a seismogram written by an instrument of specific standard type calculated to be a distance of 62 miles (100 km) from the epicenter. The scale is open ended but the largest known earthquake magnitudes are near  $8 \frac{3}{4}$ . Because the scale is logarithmic, every upward step of 1 magnitude unit increases the recorded amplitude by 10 (after Richter 1958, p. 10).

Modified Mercalli: See Intensity.

Right lateral movement. Generally horizontal movement in which the block across the fault from an observer has moved to the right.

Seismic: Pertaining to an earthquake or earth vibration, including those that are artificially induced.

Seismograph: An instrument that scribes a permanent continuous record of earth vibrations.

Shear: a mode of failure whereby two adjacent parts of a solid slide past one another parallel to the plane of failure.

Stress: In a solid, the force per unit area, acting on any designated plane within it.

Strike-slip fault: Fault in which movement is principally horizontal. (See Right-lateral movement and Left-lateral movement.)





## MODIFIED MERCALLI SCALE OF EARTHQUAKE INTENSITIES

(As modified by Charles F. Richter in 1956 and rearranged)

If most of these effects  
are observed

then the  
intensity is:

Earthquake shaking not felt, but people may observe marginal effects of large distance earthquakes without identifying these effects as earthquake-caused. Among them: trees, structures, liquids, bodies of water sway slowly, or doors swing slowly.

I

Effect on people: Shaking felt by those at rest, especially if they are indoors, and by those on upper floors.

II

Effect on people: Felt by most people indoors. Some can estimate duration of shaking, but many may not recognize shaking of building as caused by an earthquake; the shaking is like that caused by the passing of light trucks.

III

Other effects: Hanging objects swing.

Structural effects: Windows or doors rattle. Wooden walls and frames creak.

IV

Effect on people: Felt by everyone indoors. Many estimate duration of shaking, but they still may not recognize it as caused by an earthquake. The shaking is like that caused by the passing of heavy trucks, though sometimes, instead, people may feel the sensation of a jolt, as if a heavy ball had struck the walls.

Other effects: Hanging objects swing. Standing autos rock.

Crockery clashes, dishes rattle or glasses clink.

Structural effects: Doors close, open or swing. Windows rattle.

V

Effect on people: Felt by everyone indoors and by most people outdoors. Many now estimate not only the duration of shaking but also its direction and have no doubt as to its cause. Sleepers awakened.

Other Effects: Hanging objects swing. Shutters or pictures move.

Pendulum clocks stop, start of change rate. Standing autos rock.

Crockery clashes, dishes rattle or glasses clink. Liquids disturbed, some spilled. Small unstable objects displaced or upset.

Structural Effects: Weak plaster and Masonry D\* crack. Windows break. Doors close, open or swing.

VI

Effect on people: Felt by everyone. Many are frightened and run outdoors. People walk unsteadily.

Other effects: Small church or school bells ring. Pictures thrown off walls, knickknacks and books off shelves. Dishes or glasses broken. Furniture moved or overturned. Trees, bushes shaken visibly, or heard to rustle.

VII

MODIFIED MERCALLI SCALE OF EARTHQUAKE INTENSITIES (continued)

If most of these effects  
are observed

then the  
intensity is:

Structural effects: Masonry D\* damaged; some cracks in Masonry C\*. Weak chimneys break at roof line. Plaster, loose bricks, stones, tiles, cornices, unbraced parapets and architectural ornaments fall. Concrete irrigation ditches damaged.

VII

Effect on people: Difficult to stand. Shaking noticed by auto drivers.

Other effects: Waves on ponds; water turbid with mud. Small slides and caving in along sand or gravel banks. Large bells ring. Furniture broken. Hanging objects quiver.

Structural effects: Masonry D\* heavily damaged; Masonry C\* damaged, partially collapses in some cases, some damage to Masonry B\*; none to Masonry A\*. Stucco and some masonry walls fall. Chimneys, factory stacks, monuments, towers, elevated tanks twist or fall. Frame houses moved on foundations if not bolted down; loose panel walls thrown out. Decayed piling broken off.

VIII

Effect on people: General fright. People thrown to ground.

Other effects: Changes in flow or temperature of springs and wells. Cracks in wet ground and on steep slopes. Steering of autos affected. Branches broken from trees.

Structural effects: Masonry D\* destroyed; Masonry C\* heavily damaged, sometimes with complete collapse; Masonry B\* is seriously damaged. General damage to foundations. Frame structures, if not bolted, shifted off foundations. Frames racked. Reservoirs seriously damaged. Underground pipes broken.

IX

Effect on people: General Panic.

Other effects: Conspicuous cracks in ground. In areas of soft ground, sand is ejected through holes and piles up into a small crater, and, in muddy areas, water fountains are formed.

Structural effects: Most masonry and frame structures destroyed along with their foundations. Some well-built wooden structures and bridges destroyed. Serious damage to dams, dikes and embankments. Railroads bent slightly.

X

Effects on people: General Panic.

Other effects: Large landslides. Water thrown on banks of canals, rivers, lakes, et cetera. Sand and mud shifted horizontally on beaches and flat land.

Structural effects: General destruction of buildings. Underground pipelines completely out of service. Railroads bent greatly.

XI

MODIFIED MERCALLI SCALE OF EARTHQUAKE INTENSITIES (continued)

If most of these effects  
are observed

then the  
intensity is:

Effect on people: General Panic.

Other effects: Same as for Intensity X.

Structural effects: Damage nearly total, the ultimate catastrophe.

Other effects: Large rock masses displaced. Lines of sight and level distorted. Objects thrown into air.

XII

- \* Masonry A: Good workmanship and mortar, reinforced, designed to resist lateral forces.
- Masonry B: Good workmanship and mortar reinforced.
- Masonry C: Good workmanship and mortar, unreinforced.
- Masonry D: Poor workmanship and mortar and weak materials, like adobe.





## VI. NOISE



MENDOCINO COUNTY GENERAL PLAN

NOISE ELEMENT

ADOPTED BY

MENDOCINO COUNTY BOARD OF SUPERVISORS

JANUARY 22, 1976

REVISED:

SEPTEMBER 24, 1981

MARCH 14, 1983

NOVEMBER 26, 1984

DECEMBER 9, 1991

Mendocino County Department of Planning and Building Services  
Office: 589 Low Gap Road  
Mail: Courthouse  
Ukiah, CA 95482



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## I. INTRODUCTION

### A. NOISE AND ITS EFFECTS

Noise is defined as sound that is annoying or which has a detrimental effect on human physiologic or psychologic processes. Some sounds have more adverse effects than others; the most annoying types are the loudest and highest pitched. Intermittent and irregular sound is also very disturbing, and the more random a sound occurrence, the more irritating it becomes. Noise from an uncertain cause, hidden or moving source is more annoying than readily identifiable noise. Unexpected loud sound (the sonic boom) which startles the hearer is extremely disturbing. We seldom object to the constant low-level noise of a residential neighborhood or to the noise we generate ourselves but noise which is inappropriate to our activity becomes obtrusive and annoying. In short -- noise is unwanted sound.

Some authorities state that the overall noise level of United States has increased one decibel every year for the past 25 years. In terms of perceived noise, this is about a seven-times increase in 25 years. The increase is astounding but believable considering the increase in population and in the number of new noise-making items which have come into common usage during the period. For example, an electric typewriter produces 60 decibels, a garbage disposal, 80 decibels and a plane 1,000 feet overhead, 85 decibels. None of these was common 25 years ago. Increased noise seems an undesirable by-product of modern living.

The effects of noise have become so serious that there is widespread public interest in controlling and reducing unnecessary sounds as a result, there is a State mandate to include a noise element in the general plan. The United States Environmental Protection Agency states that permanent hearing loss may occur with exposure to sound levels of 70 or more decibels\* over a long period of time. Approximately 1 in 10 Americans suffers some measurable hearing loss partly because of such exposure.

Noise also interferes with safety and communication, it causes undue stress and lowers the quality of life generally. Additionally, economic values may be affected by noise. A noisy area is a less desirable place to live, work and play in than a quiet one, and reduced property values or added costs for acoustical insulation may result from noise. It can also lower productivity of workers.

In urban areas where most Americans live, the transportation facilities are the chief noise generators. It is difficult to adjust urban land use so a major concern is to reduce the noise generated through traffic control, buffering freeways and other means. In Mendocino County, transportation is also a major noise source but, as yet, few people are drastically affected since the County is mainly rural. The County has the opportunity, not only to reduce noise at the source, but to plan in future land uses so that the effects of necessary noise will not be

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\* See definitions for dBA scale. Normal conversation at 12 feet from speaker is approximately 50 dBA. For additional information of decibel readings, see the Acoustical Scale.

burdensome. A coordinated approach to the problem by citizens, industry and government is needed to reverse the trend towards increased exposure to noise, and to have a future environment in which we can hear what we want to hear.

## B. LEGAL AUTHORITY FOR THE NOISE ELEMENT

California Government Code Section 65302 (g) requires a noise element of all city and county general plans as follows:

"A noise element which shall recognize guidelines adopted by the Office of Noise Control pursuant to Section 46050.1 of the Health and Safety Code, and which quantifies the community noise environment in terms of noise exposure contours for both near and long-term levels of growth and traffic activity. Such noise exposure information shall become a guideline for use in development of the land use element to achieve noise compatible land use and also to provide baseline levels and noise source identification for local noise ordinance enforcement."

"The sources of environmental noise considered in this analysis shall include, but are not limited to, the following:

- (1) Highways and freeways.
- (2) Primary arterials and major local streets.
- (3) Passenger and freight on-line railroad operations and ground rapid transit systems.
- (4) Commercial, general aviation, heliport, helistop, and military airport operations, aircraft overflights, jet engine test stands, and all other ground facilities and maintenance functions related to airport operation.
- (5) Local industrial plants, including, but not limited to, railroad classification yards.
- (6) Other ground stationary noise sources identified by local agencies as contributing to the community noise environment."

"The noise exposure information shall be presented in terms of noise contours expressed in community noise equivalent level (CNEL) or day-night average level (Ldn). CNEL means the average equivalent A-weighted sound level during a 24-hour day, obtained after addition of five decibels to sound levels in the evening from 7 p.m. to 10 p.m. and after addition of 10 decibels to sound levels in the night before 7 a.m. and after 10 p.m. Ldn means the average equivalent A-weighted sound level during a 24-hour day, obtained after addition of 10 decibels to sound levels in the night before 7 a.m. and after 10 p.m."

"The contours shall be shown in minimum increments of 5 dB and shall continue down to 60 dB. For areas deemed noise sensitive, including, but not limited to, areas containing schools, hospitals, rest homes, long-term medical or mental care facilities, or any other land use areas deemed noise sensitive by the local jurisdiction, the noise exposure shall be determined by monitoring."

"A part of the noise element shall also include the preparation of a community noise exposure inventory, current and projected, which identifies the number of persons exposed to various levels of noise throughout the community."

"The noise element shall also recommend mitigating measures and possible solutions to existing and foreseeable noise problems."

"The state, local, or private agency responsible for the construction, maintenance, or operation of those transportation, industrial or other commercial facilities specified in paragraph 2 of this subdivision shall provide to the local agency producing the general plan, specific data relating to current and projected levels of activity and a detailed methodology for the development of noise contours given this supplied data, or they shall provide noise contours as specified in the foregoing statements."

"It shall be the responsibility of the local agency preparing the general plan to specify the manner in which the noise element will be integrated into the city or county's zoning plan and tied to the land use and circulation elements and to the local noise ordinance. The noise element, once adopted, shall also become the guideline for determining compliance with the State's Noise Insulation Standards, as contained in Section 1092 of Title 25 of the California Administrative Code."

In addition to the basic law, the Office of Noise Control in coordination with the Office of Planning and Research published Guidelines for the Preparation and Content of Noise Elements of the General Plan in February 1976 which expand on the required scope of the noise element and the methodology to be followed. Transportation noise is given major importance as indicated by the law and by the seriousness of this noise source. However, the Guidelines require that other noise sources be investigated as well and standards and criteria in relation to all sources be developed.

#### C. RELATIONSHIP OF THE NOISE ELEMENT TO OTHER GENERAL PLAN ELEMENTS

The general plan elements are an important tool which elected officials can use to provide policy guidance to assist in decision-making. All of the elements of the General Plan are related and interdependent to some degree. However, the noise element is most closely related to the land use, housing, circulation, and open space elements as shown in Figure 1.



A major objective of the noise element is to provide guidelines to achieve noise-compatible land use. The land use and noise elements, are, therefore, closely related. The noise element, by identifying noise-sensitive land uses and establishing compatibility guidelines for land use and noise, will influence the general distribution, location, and intensity of future land use. Effective land use planning can alleviate noise problems.

Residential areas are one of the most noise-sensitive land uses. Therefore, the housing element is directly affected by the noise element. The housing element policies and programs should include safeguards against noise intrusion. Implementation of land use/noise compatibility guidelines can reduce noise impacts in residential locations. In addition, proper noise mitigation measures during construction of housing can guard against adverse noise impacts.

The circulation system within the County is one of the major sources of continuous noise. Therefore, the existing and future circulation systems identified in the circulation element greatly influence the noise environment. The circulation routes such as freeways and highways, along with truck routes, should be located to minimize noise impact upon noise-sensitive land use. The location and design of new transportation facilities and possible mitigation of noise from existing and planned facilities greatly influence the overall noise environment within the County.

Since noise can adversely affect the enjoyment of quiet activities in open space, the noise element is also closely related to the open space element. Conversely, open space can be used as a noise buffer between incompatible land uses. This technique can reduce community noise levels and also provide usable open space for recreation.

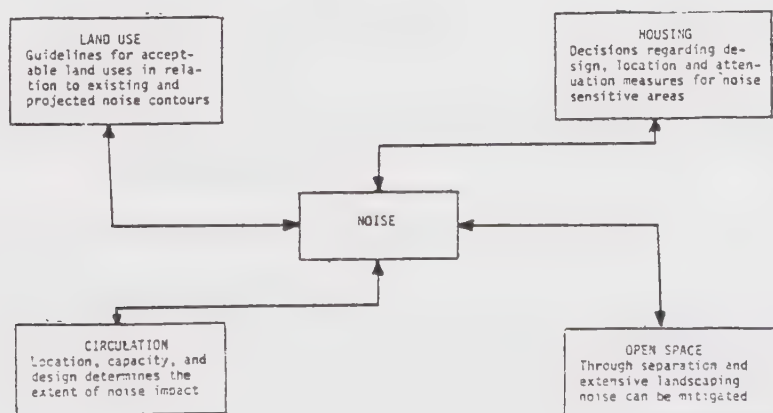


Figure 1



## II. HUMAN RESPONSE TO SOUND--BACKGROUND INFORMATION

### A. DEFINITION OF TERMS

The harm or annoyance produced by noise relates to the intensity, frequency and duration of sound. Intensity, or relative loudness, is measured in decibels (dB). A decibel is equivalent to the smallest increase in sound which the human ear perceives. Measured on a modified logarithmic scale, a doubling of intensity equals approximately six decibels. The ear perceives an increase from 10 to 20 decibels as a two and one-half times increase from 10 to 30 decibels as five times increase. Frequency is the pitch of sound, ranging from the high screech produced by rapid vibrations to the low growl produced by slow vibrations. Pitch is measured in cycles per second or Hertz units (Hz). The perfect human ear hears frequencies from 20 to 20,000 cycles but is more sensitive to the rapid vibrations of high pitch than to the slow vibrations of low pitch. Therefore two sounds or equal loudness (decibels) but of different frequency (Hertz) will be perceived differently. This makes it necessary to weight sound measurements to correlate them with actual human perception.

Duration, the final measurement, is the time pattern of the sound: short- or long-lasting, steady or intermittent, day or night occurrence.

The following glossary of terms is in general usage and is employed by the California Department of Transportation and throughout this report.

A - Weighting: a network used in sound level meters to filter out extreme high and low frequencies, so as to measure a representative sound level correlating to the response of a human ear.

Ambient Noise: background noise associated with a given environment, usually a composite of sounds from many sources, near and far. It is the residual noise prevailing after all identifiable noises have been eliminated.

dBA: a unit, in decibels, for measuring sound level after a sound has been A-weighted.

Decibel (dB): a measure, representing one-tenth of a bell on a modified logarithmic scale that serves as a basis for measuring the relative loudness of sounds. It is approximately equal to the smallest degree of difference of loudness ordinarily detectable by the human ear.

L10: the A-weighted noise level which is exceeded 10 percent of the time over the duration of the sample noise measurement. Utilized for the assessment of noise impact of traffic, this method is the standard for the State Department of Transportation.

The following definitions are not used in this report but are often used in noise ordinances and literature on sound. They qualify measurements and may have later application in Mendocino County.

CNEL: "community noise equivalent level" represents a cumulative measure in decibels of community noise during a 24-hour day. It applies weighting factors to account for lower tolerance of people to noise during the evening (7 p.m. to 10 p.m.) and night (10 p.m.-7 a.m.). It was used in the City of Ukiah Noise Element in relation to airport noise.

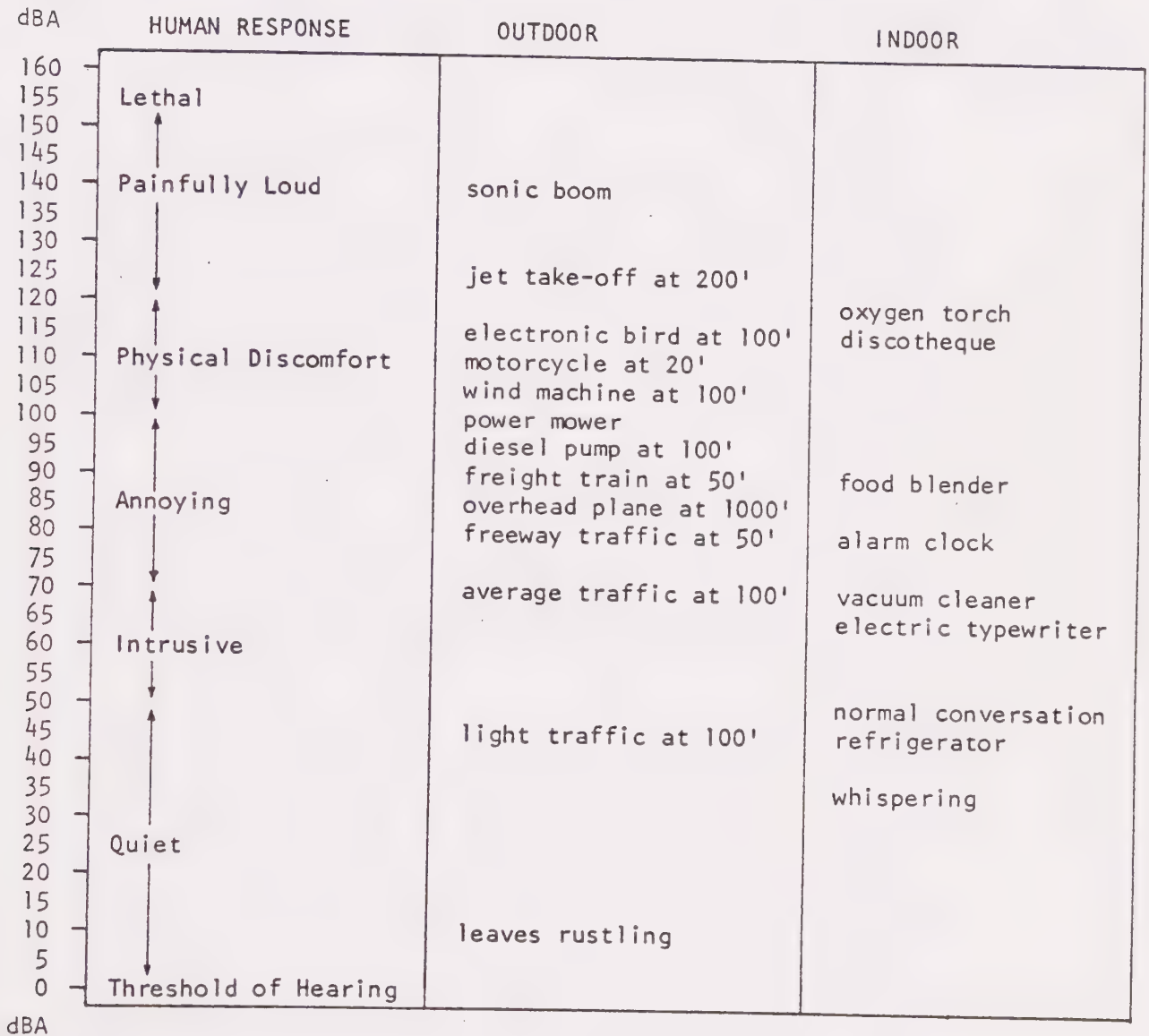
CNR: "composite noise rating" is a scale which accounts for the totality of all aircraft operations at an airport in quantifying the total aircraft noise environment. It is used for evaluating the compatibility of land use around airports.

Ldn: "Day/Night Equivalent Sound Level" is a standard measure used in describing the cumulative effect of exposure to all sources of environmental noise. It is essentially the same as CNEL except that weighting factors are applied only to the night-time hours (10 p.m.-7 a.m.).

#### B. RELATION OF NOISE LEVEL TO HUMAN RESPONSE

Units of measurement must be related to experience before we can understand their significance. The decibel scale, the basic sound measurement, runs from zero which is the threshold of sound to 150 which is considered a lethal level of sound. Within this range, many measurements have been taken and several scales compiled. Some variations can be noted in comparing different scales. For instance, normal conversation is rated at 50 decibels on one scale and at 60 on another. These variations generally occur because of different distances between receiver and source during the measurement. The scale on the following page has been compiled from various sources and is accepted by Mendocino County Division of Environmental Health. It explains decibels in terms of recognizable noises and human response. In interpreting it, it should be remembered that 50 decibels is perceived as two and one-half times as loud as 40 and five times as loud as 30.

# Acoustical Scale



## C. APPROACHES TO NOISE REDUCTION

Noise can be controlled on three fronts: at the source (the object creating noise), along the transmission path (the route noise follows from source to receiver), and at the receiver (the person perceiving the sound). In theory, full responsibility for noise reduction might rest with the operators of the noise source; in practice, a combination approach on all three fronts is usually called for.

### 1. Reduction at the Source

Local government is relatively powerless to control many noise sources and much of the needed regulation has been taken over by the state and federal governments. Noise emissions of aircraft, rail carrier and interstate motor carrier are subject to federal regulation. Airport operations are under both state and federal regulation. Additionally, the federal Noise Control Act of 1972 is a major attempt to eliminate excess noise at the design stage of various new manufactured products. Communities may regulate operation of new or old noise producing equipment however. Cities and counties, for instance, can set speed limits with the aim of reducing noise and limit hours and locations for operation of noisy equipment.

### 2. Modification of the Transmission Path

One way to modify the transmission path is to make it longer; the greater the distance between noise source and receiver, the less sound perceived.\* New highways should be located as far as possible from noise-sensitive land uses. Sometimes traffic can be rerouted to reduce noise impact.

Requiring deep set-backs or buffer strips within new developments located close to major highways or other major noise sources can help in many cases. Noise travels in almost straight lines and may be stopped or deflected in much the same manner as light. Noise barriers aim at such deflection. In order to reduce noise significantly there must be a solid object blocking the line of sight between the source and the receiver. A short barrier along a roadway will provide a very little noise reduction. To be effective, a barrier must extend for considerable distance. Trees and shrubbery are not sufficient barriers unless the planting is very dense and deep. Depressing highways or installing special barrier walls or earth berms at grade are useful noise reduction measures.

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\*Noise decreases by a factor of four when distance is doubled.

### 3. Noise Control at the Receiver

Some sites will always be subject to noise. If buildings placed on such sites are designed and sited with the noise source and noise level in mind, the occupants of structures will be afforded some protection. An apartment house can be sited with its narrow blind end towards the noise source, for instance. Acoustical treatment of walls may be needed as well. Regulating land use to preclude sensitive noise uses (residences) in necessarily noisy areas is the best measure and one which is practical in a low density area such as Mendocino County.





### III. SOURCES OF NOISE IN MENDOCINO COUNTY

Noise comes from an almost infinite number of sources; for discussion, four major categories have been established: transportation; industry and commerce; agriculture; and, other sources of noise.

#### A. TRANSPORTATION

##### 1. State Highways

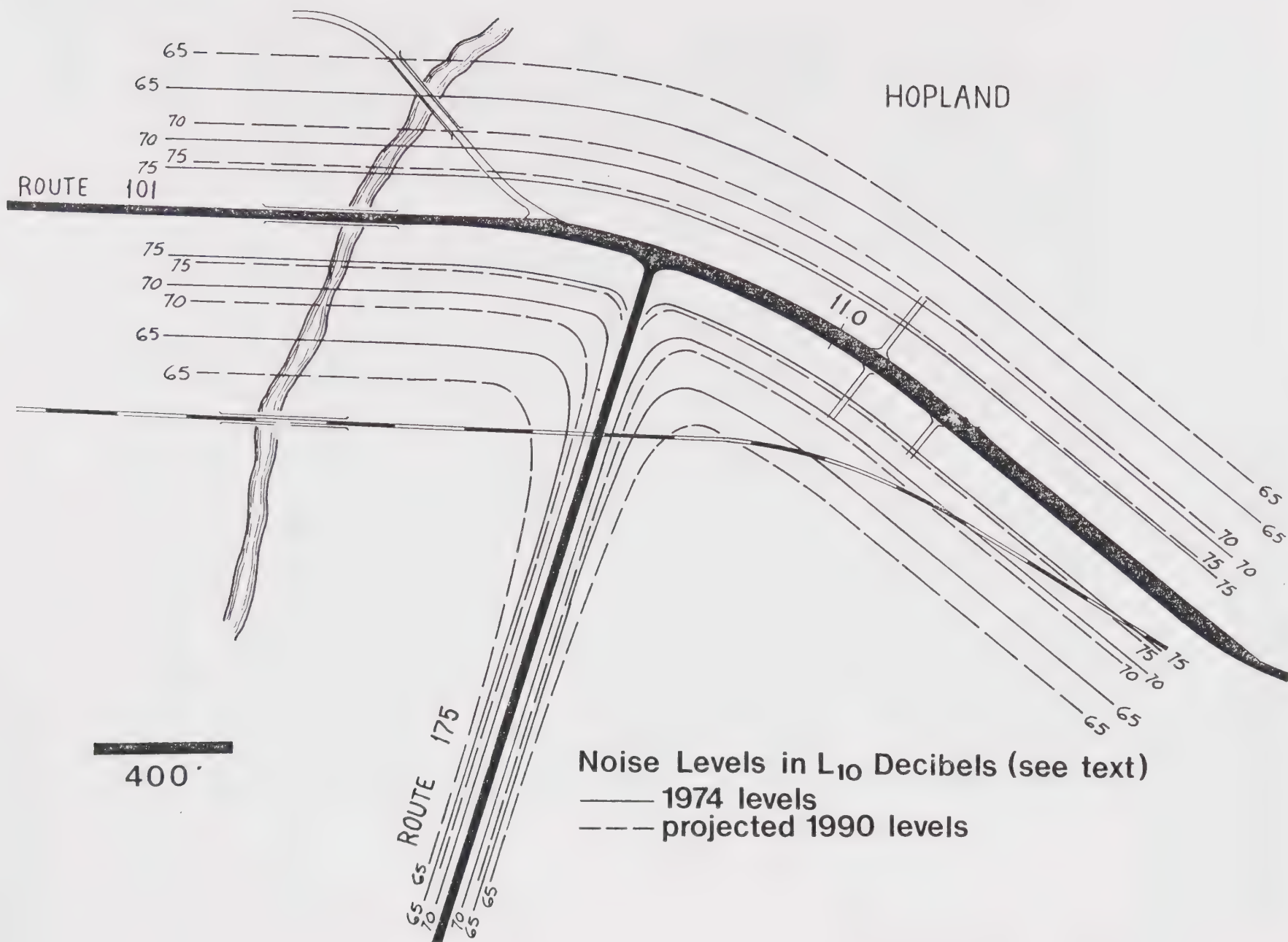
The State Department of Transportation cooperates with agencies preparing noise elements by supplying existing noise measurements and projections for 1995 for all state highways. In Mendocino County, these consist of strip maps showing contours in urban areas, contours at all state highway intersections and readings taken along other non-urban stretches.\* The large strip maps for the urban areas and their vicinities (Ukiah, Point Arena, Willits, and Fort Bragg) are on file in the County Planning Office as are the detailed readings. The intersection maps are reproduced here. Additionally, the City of Ukiah has prepared a preliminary noise element which contains maps of its area.

A look at the intersection maps on the pages following are enough to identify Route 101 as the noisiest highway in Mendocino County. At Hopland, for instance, over 65 decibels of sound register for approximately 310 feet from Highway 101; Route 175 shows the same level of sound limited to approximately 60 feet from the road. Through the City of Ukiah, 65 decibels registers at 400 feet from the freeway; the noisiest non-urban reading on Highway 101 was about 9 miles north of the Sonoma County line where 65 decibels registered at 343 feet from the highway; the quietest portion of Highway 101 runs from Reynolds to the Humboldt County line. Even in this stretch, 65 decibels registered at almost 200 feet. Other high readings occur along Highway 1. At the following points 65 decibels register close to or slightly over 200 feet from the highway; at Gualala, at a point 17 to 19 miles north of Gualala and at Fort Bragg. Route 20 is also noisy at Fort Bragg. Other State Highways do not reach these levels. Highway 128 at Boonville, comes closest, registering 65 decibels at 185 feet.

The 1995 projections show all highways with increased noise. Along Highway 101 at Sonoma County line the 65 decibel contour is projected to move outward from the present 335 feet to 453 feet; in the quietest section (close to the Humboldt County line) the 65 decibel contour moves from the present 185 feet to 288 feet. The Department of Transportation's projections are modified extrapolations of past statewide trends; they do not take into account possible technical advances to lower noise emission of vehicles or passage of new noise ordinances. Most significantly, future

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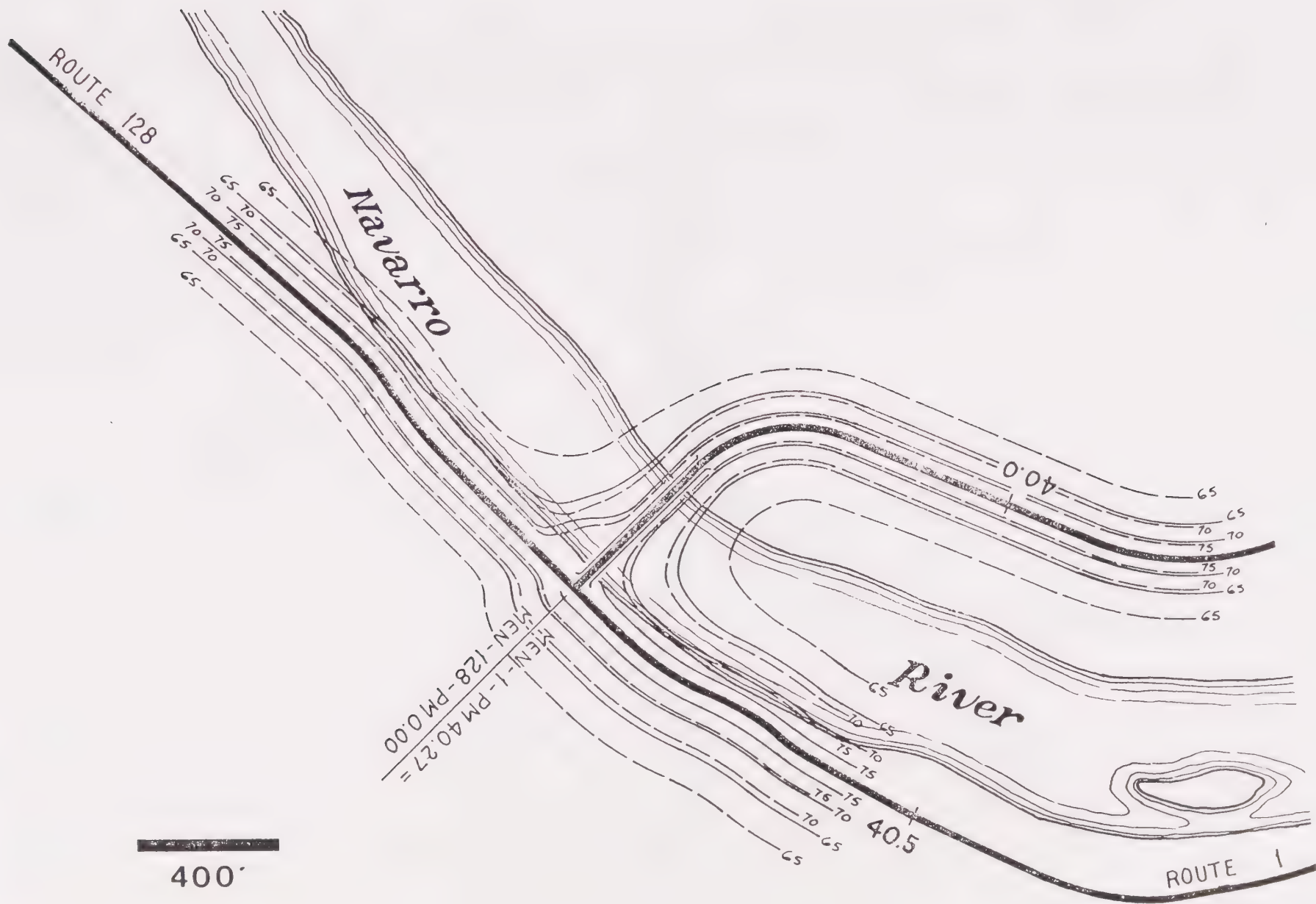
\* Readings and contours are based on the L10 definition of noise level.



Noise Levels in L<sub>10</sub> Decibels (see text)

—— 1974 levels

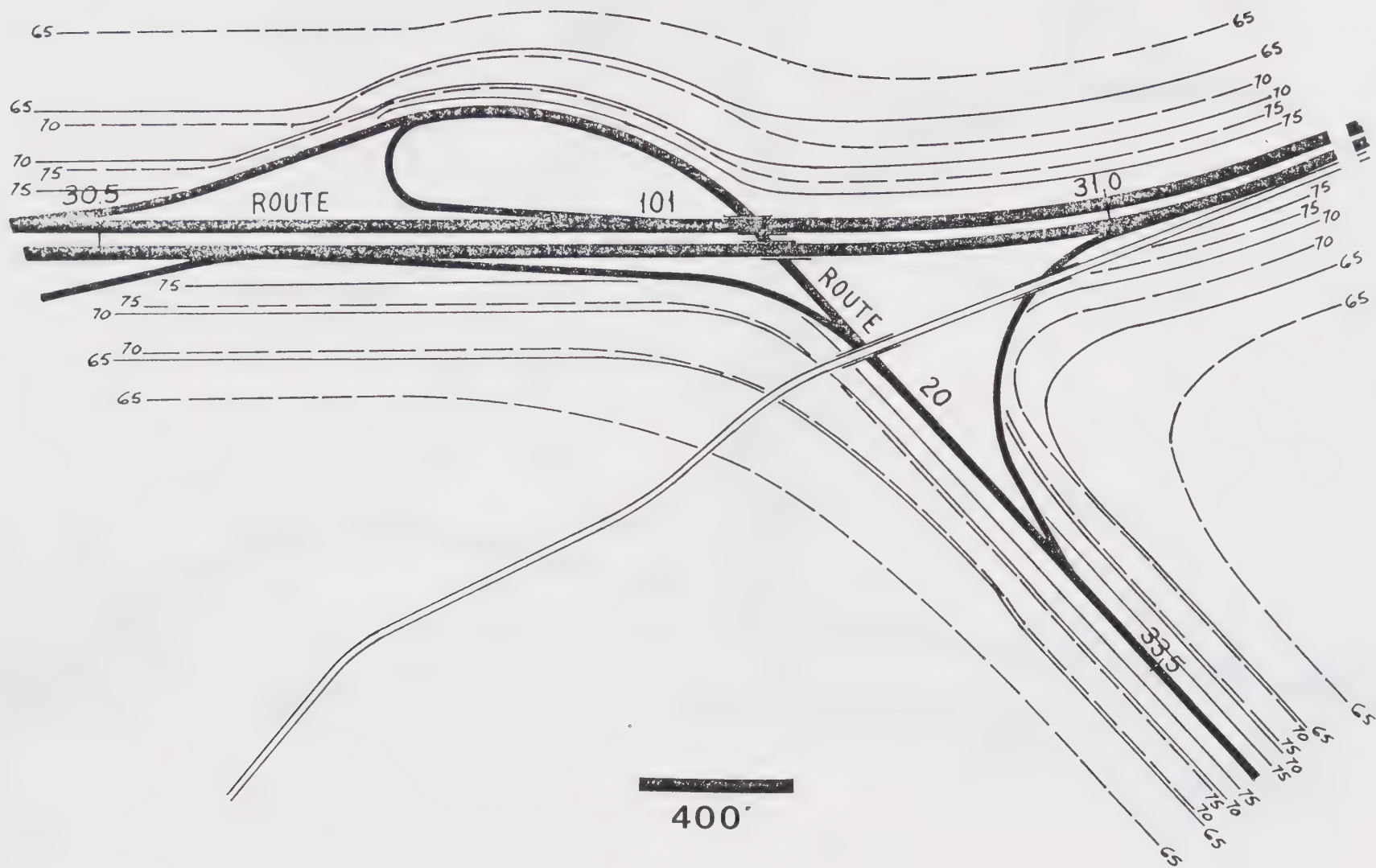
---- projected 1990 levels











*River*

ROUTE 208

14.5 65

LEGGETT

ROUTE 271

ROUTE 101

R91.0

$$R9136$$

97 451

400'

growth rates of population were not considered. The projections, in general, show what will occur if past trends continue. There is evidence that trends are being modified. Population growth in California has slowed, technical advances are being made and the future may be more hopeful than the projections indicate. However, noise is and will continue to be a problem along urban and urbanizing stretches of major highways. Now only limited areas are seriously affected but the problem can become more serious as urbanization spreads. Future land use planning must take the potential noise problem into account to keep the annoyance at acceptable levels.

### County Roads

The following table shows the location of the noise contours for the major county roads. Noise levels in 1990 are expected to be only slightly higher (2dBA) along these roads as the expected increases in traffic will be partially offset by the quieter vehicles that will be manufactured between now and 1990.

TABLE 1. NOISE CONTOURS FOR MAJOR COUNTY ROADS

Road	1979 ADT*	Operating Speed	Percentage Trucks	Distance to Noise Contours from Center of Road
North State St. CR 104 (entire length)	7900	35 mph	15%	65 Ldn @ 106' 60 Ldn @ 290'
South State St. CR 104A (entire length)	10000	35 mph	10%	65 Ldn @ 106' 60 Ldn @ 240'
Lake Mendocino Dr. CR 227B (entire length)	6500	35 mph	5%	60 Ldn @ 130'
East Road CR 230 (entire length)	4000	45 mph	5%	60 Ldn @ 100'
KUKI CR 250A (entire length)	5300	25 mph	30%	60 Ldn @ 220'
Simpson Lane CR 415 (entire length)	3400	55 mph	5%	60 Ldn @ 150'

\*Average daily traffic



### 3. Railroads

The Northwestern Pacific Railroad runs north through Hopland, Ukiah, and Willits. At Longvale it turns eastward to the Eel River Valley which it follows to Eureka. The line carries only freight at the present time operating six through freight trains per day. Three of the trains pass during the hours of 7 a.m. to 10 p.m. and three pass during the hours of 10 p.m. to 7 a.m. Northwestern Pacific does not anticipate a significant change in this number in the future. Although this is a relatively small number of trains, it is a large enough number to generate a 65 Ldn contour within 225 feet from the tracks and a 60 Ldn contour 400 feet from the tracks.

The California Western Railroad running from Willits along the Noyo River to Fort Bragg has become famous as a recreational passenger line with its Skunk Train which is very popular with train buffs and others during the summer months.

The Division of Environmental Health in Mendocino County reports that the railroads typically produce 65 decibels at 400 feet from the tracks. They are, therefore, noisier than the highways for the brief times of train passage. Neither line is heavily used at present, and since most of the routes traverse unsettled rural areas, the only areas affected by noise are within the cities. No reports have been received that indicate a severe problem or one which warrants action. Noise-sensitive land uses proposed within 400 feet of the railroad tracks should however be evaluated for their compatibility with this railroad noise.

The Northwestern Pacific line is considered an important link in the transportation system of Mendocino County and there would undoubtedly be local opposition to abandonment. The heavy freight it carries, though limited in amount, results in fewer trucks on Highway 101 and in this respect, it contributes to lower noise levels at crucial points in the County.

Future problems can be avoided by permitting only appropriate uses within the high noise area bordering the tracks. Industrial uses which are tolerant of noise and which use the railroad for shipping are, of course, the most appropriate; residential uses are totally inappropriate.

### 4. Airports

There are currently seven airports within Mendocino County which are open to the public on a regular basis. The Boonville, Round Valley (Covelo), and Mendocino County (Little River) airports are owned and operated by the County of Mendocino. The Ukiah and Ellsfield airports are owned and operated by the cities of Ukiah and Willits, respectively. The Fort Bragg and Ocean Ridge (Gualala) airports are privately owned and operated. In addition, there are several privately owned in the County which are not open to the general public on a regular basis.



The Ukiah airport is the most heavily used, with 40,000 operations per year reported. Little River reported 8,000 operations per year, Willits 7,000, Round Valley 4,000, and Boonville 1,800. The number of operations per day may vary significantly depending upon weather and time of year.

Heaviest traffic occurs during the summer months when the weather is good and school is out. Christmas and Easter may also be periods of increased traffic depending on the weather. There is usually more traffic on Saturdays and Sundays than on week days. During the fire season, generally between May and October, three or more fire suppression planes are based at the Ukiah airport, their activity dependent upon the number of fires that occur. Records of the number of aircraft operations per day at each airport are not available.

The City of Ukiah General Plan contains a map showing noise contours of the Ukiah airport, however, it appears that the map is based only on traffic arriving from the south and departing to the north. The 65 dBA CNEL contour extends from Norgard Lane south of the airport to a point midway along the runway on the north. Aircraft using the north end of the runway, as would be the case when traffic was in the opposite direction, would result in noise contours extending north of the runway similar to contours mapped for the south end. The 56 dBA CNEL contour might extend as far north as Talmage Road.

The Division of Environmental Health, Mendocino County Health Department, took measurements at the Ukiah airport and found that the small planes using the facility, produced 70 dBA at 600 feet from the runway. This is typical of all air operations in the County, except those of the aerial tankers, crop dusters and business turbo-props. These planes are considerably noisier and do create a noise problem for the urban residents.

The small air strip at Boonville has residences in the flight pattern and more are planned immediately adjacent. This was a conscious decision of the community, the airport operators and the subdividers who hope to attract second home or permanent residents with private planes. It appears these are people who value proximity to an airstrip sufficiently to tolerate the noise. The location and orientation of the airstrip at Fort Bragg is such that most flights land and take off without passing over the City. In Ukiah, the orientation is not so advantageous; flights pass over the main portion of the urban area. Some noise intrudes into residential areas in both cities but the problem is greater

in Ukiah. If and when major carrier services utilize the Ukiah Airport facilities, the noise problem may intensify to the point where annoyance could occur. There is currently no major problem with urbanization at Mendocino County (Little River) airport. However, if the present trend towards residential development in the flight path continues, a noise problem may occur in the future.

The Ukiah General Plan recognizes "the proximity of the airport to urban uses and the lack of adequate clear zones" as problems. It has a goal "to continue the current level of service at the existing airport" and does not recommend a major increase in facilities and service. The City is currently expanding its clear zones to meet FAA requirements. The report also recommends "that stringent zoning controls be enforced to retain expanses of land surround the airport in open space or non-residential uses." The noise element of the Ukiah General Plan maps the Community Noise Equivalent Level for the airport and incorporates the recommendations above.

## B. COMMERCE & INDUSTRY

Business and manufacturing are relatively noisy activities; they involve concentrations of people, traffic, and machinery, all potential sources of noise.

### 1. Commercial Noise

This is primarily a city problem in Mendocino County since the major concentrations of stores and businesses are within the incorporated areas. The small unincorporated towns such as Laytonville or Covelo have small centers which have a mixture of commercial and residential uses. The nature and scale of these centers is such that the uses are generally accepted and noise complaints are infrequent.

### 2. Industrial Noise

The lumber mills are the major source of noise which can be classed as a problem within the unincorporated towns and county area. The effects are most evident in small settlements such as Laytonville or Calpella where significant numbers of people live close to the mills. A modern mill, on the average, produces noise levels of 65 dBA at a distance of 400 feet; beyond that, the level diminishes but, due to the low ambient noise level in the small rural communities, the noise may be very evident even though it is within the range of what is normally considered acceptable.

Most of the mills have made progress in reducing noise by enclosing planers and other extremely noisy machinery; a few, such as the one in Laytonville, have not been able to accomplish as much.

Discussion of mill noise must take into account the importance of the lumber industry to the economy of the County. Very few residents will be found who would ask a mill to expend major funds for noise reduction or who are unwilling to tolerate a fairly high level of noise in the vicinity of a mill. Wherever feasible, however, mill noise should be reduced. More important, additional urbanization should not occur within the area of high noise level surrounding mills.

Gravel crushing operations, producing an average of 70 dBA at 400 feet from the operation, are slightly noisier than the mills. However, such operations are not close to residential concentrations and create no problem at this time. Care should be exercised that problems do not arise in the future. Good land use planning can ensure this.

### C. AGRICULTURE

Agriculture is often considered a peaceful and quiet pursuit which bothers no one, and, in turn, is not bothered by any other activity. However, modern intensive agriculture makes use of machines and equipment which produce noise and this noise may be more apparent than urban noise. The intermittent emission of agricultural noise and the low level of the ambient noise are the reasons why noise in the county is more noticeable and potentially annoying to non-farm residents. Major noise making machines and equipment used in Mendocino County are the electronic birds placed in vineyards (producing 110 dBA at 100 feet), diesel pumps and wind machines. The wind machines, used to keep killing frost from forming, are gradually being phased out as water spray methods are substituted. In the future, one diesel pump will replace several wind machines in each field resulting in reduced noise levels. In addition, aircraft are utilized for fertilization, pesticide application, and related agricultural uses.

The operation of mechanical devices and machinery is necessary to modern agriculture and is essential in any agricultural area today. The importance of food production to the economy and well-being of society need not be stressed here. Buyers should be forewarned of potential noise and understand that public action to abate such noise will not be taken unless the use of faulty equipment over long periods of time can be proved. The burden of compatibility would rest heavily with the nonfarm uses. In urban or suburban situations this would not be the case, in a residential neighborhood an individual would not have the right to set up an electronic bird in his garden, for instance.



D. NOISE CONTOURS FOR NOISE SOURCES (OTHER THAN STATE HIGHWAYS) IN MENDOCINO COUNTY

As required by Section 65302 (g) of the California Government Code, noise contours for the following noise sources have been developed by the consulting firm of Charles M. Salter Associates, Inc. The contours are shown down to 60 Ldn\*, in increments of 5 dB. A glance at the contour maps will show that there seem to have been many noise generating activities omitted. For example; the County airport at Little River, the other airports in the County, the landfill operations and some of the sand and gravel operations. However, each of these activities was evaluated and noise contours were not prepared for these sources as they do not generate an average annual 60 Ldn noise contour off their property. There are several reasons why a seemingly noisy activity will not have a 60 Ldn noise contour:

1. A large property holding such that the contour is on land owned by the noise generator,
2. Large periods of inactivity (seasonal), and
3. Long periods of time between individual noisy events (airports for example).

The contours shown are based on 1978-79 activity information. An attempt was made to find out if activity information warranted drawing another set of contours to depict noise conditions in 1995. In all cases except County roads, there were no plans for significantly increased activity. Certainly within the accuracy of any set of environmental noise contours (+- 3 dBA) the contours shown can be considered to represent both existing and future conditions.

Because there is no established noise estimation technique for lumber mills and sand and gravel/asphalt batch plan operations, the noise contours for these sources were established where possible by noise monitoring. For those plants that were not operating during the time of the noise survey the contours are based on data from the most similar operation for which measurements were made. In the following discussion of the fixed noise sources the results of these noise measurements are included. In addition

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\*The noise contours are in terms of the day-night average noise level(Ldn). The Ldn was developed to account for the varying sensitivity of people to noise throughout a 24-hour period. Noises which occur during the night from 10 p.m. - 7 a.m. are penalized by +10 dBA. This descriptor is one of two deemed appropriate for use in noise elements. The other, the Community Noise Equivalent Level (CNEL) is essentially numerically equal to the Ldn. Both of these descriptors account for people's increased sensitivity to noises that occur from 10 p.m. - 7 a.m.

to the equivalent noise level\* (Leq) measured at each location, the statistical noise metrics, L1\*\*, L10, L50, L90, and L99 are also given. The parameters give some idea of the variability (or lack thereof) of the noise at each site, and will be useful if the County considers the adoption of a quantitative noise ordinance.

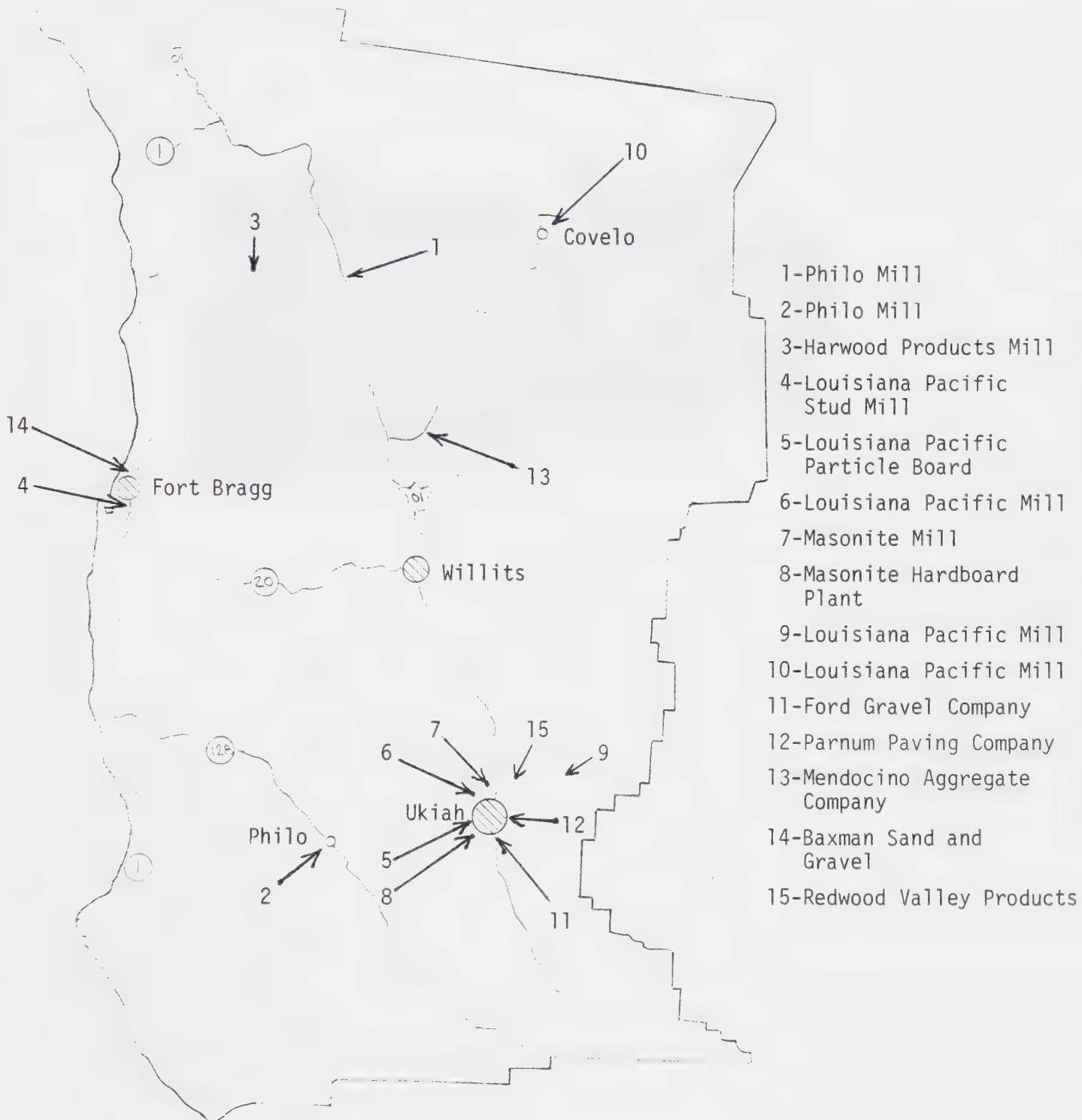
The individual case studies are presented because they point out some of the typical types of situations faced when evaluating environmental noise problems. The type of adjacent land use, the presence or absence of other noise sources, and the economic importance of a noise source to a community are all factors that make noise planning a challenging and interesting subject.

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\*Leq is the equivalent steady-state sound level that, in a stated period of time, would contain the same acoustic energy as the time-varying sound level during the same time period.

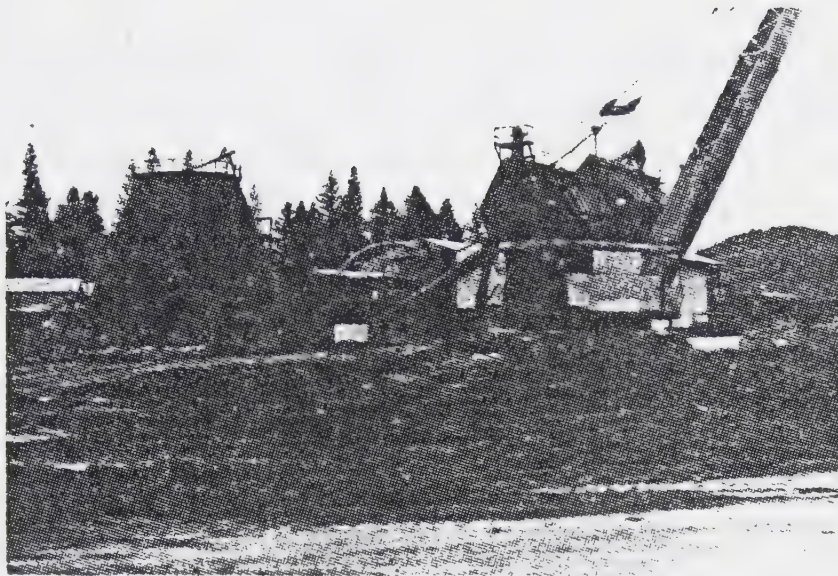
\*\*The sound level in dBA that was equaled or exceeded 1 percent of the time; L10, L50, L90, and L99 are the levels equaled or exceeded 10, 50, 90 or 99 percent of the time, respectively.





INDEX TO FIXED NOISE SOURCES





# 1. PHILO LUMBER MILL--LAYTONVILLE

The Philo Lumber Mill in Laytonville operates a day shift only. A daytime  $L_{eq}$  of 66 dBA was measured at a distance of 400 feet north of the building housing the head rig, the trim saws, and the chipper. This daytime  $L_{eq}$  results in an  $L_{dn}$  of 61 dB. The 60  $L_{dn}$  contour is located 450 feet from the mill building. The planer was not operating on the day that the mill was visited. Based on noise measurements made at the planer located at the Philo Lumber Mill in Philo the 60  $L_{dn}$  contour for the planer would be located about 100 feet from the planer building.

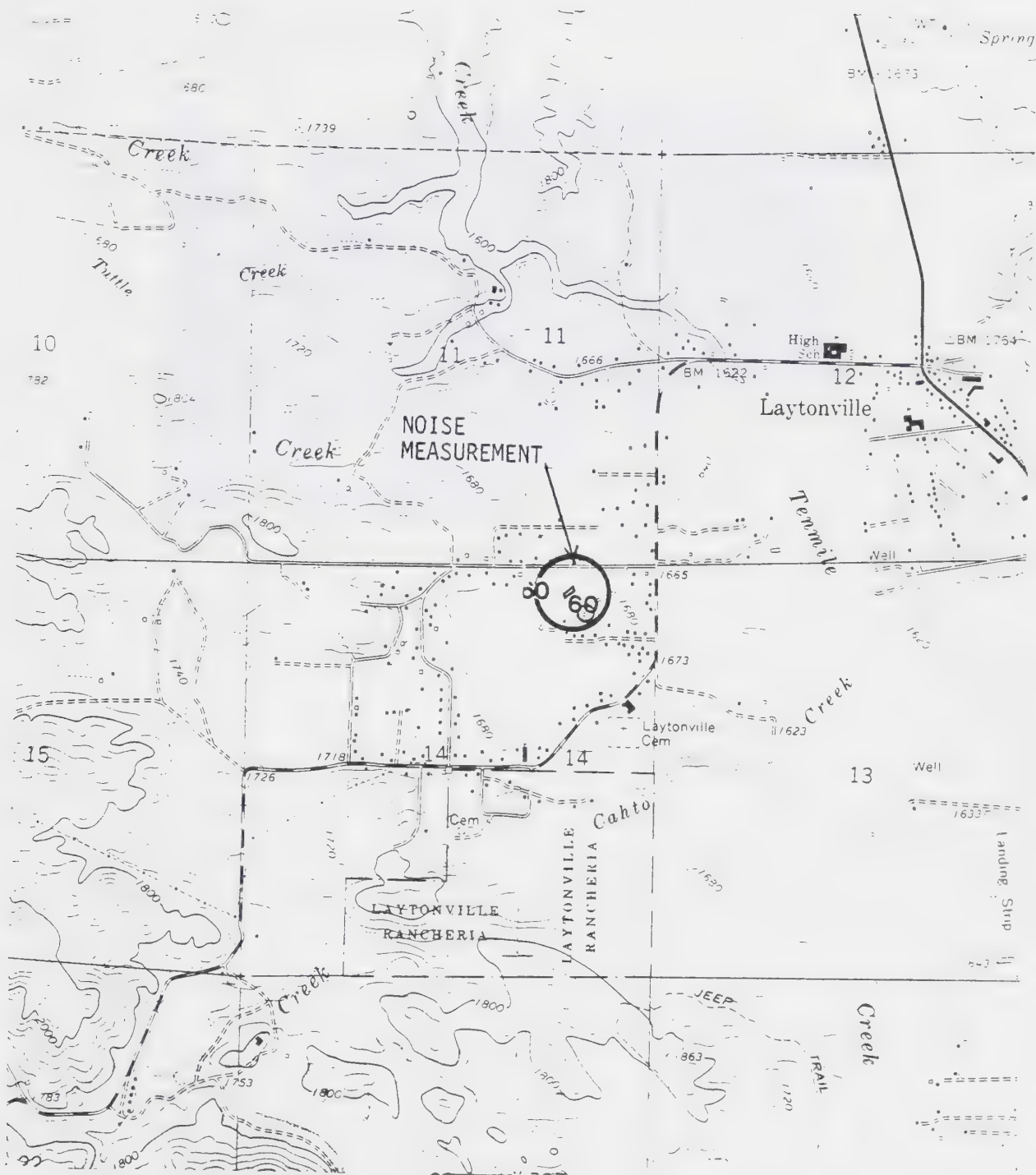
The mill is bordered on the north, east and south sides by residences. The noise environment at these residences is dominated by sawmill noise and several of the closer

residences are exposed to a noise level greater than 60  $L_{dn}$ . This is higher than the County's design goal for residential land uses. These residences represent an example of a development that if it were proposed today should be looked at closely, through the planning and environmental impact report processes, to insure that 1) there would not be a more appropriate land use and/or 2) if residences are desirable what mitigation measures are available to minimize the noise impact.

The only relief for persons living near this mill, or any other industrial noise source in the County, would be through the adoption of a quantitative noise ordinance specifying the amount of noise allowed in given land uses due to industrial noise sources. However, due to economic and other considerations, noise ordinances are usually a compromise. The surest way of eliminating land use conflicts is through proper planning.

Data for Noise Measurement  
Made at Location Shown on Contour Map (dBA)

		<u><math>L_1</math></u>	<u><math>L_{10}</math></u>	<u><math>L_{50}</math></u>	<u><math>L_{90}</math></u>	<u><math>L_{99}</math></u>	<u><math>L_{eq}</math></u>
2/27/79	1:45-2:00pm	70	68	66	64	63	66



$L_{dn}$  NOISE CONTOUR  
PHILO LUMBER MILL

1" = 2000'







#### PHILO LUMBER MILL--PHILO

This mill is located in the community of Philo and is a day shift operation only. Two measurements were made, one of the noise generated by the main mill facilities and one of the noise generated by the planer located on the north side of Highway 128.

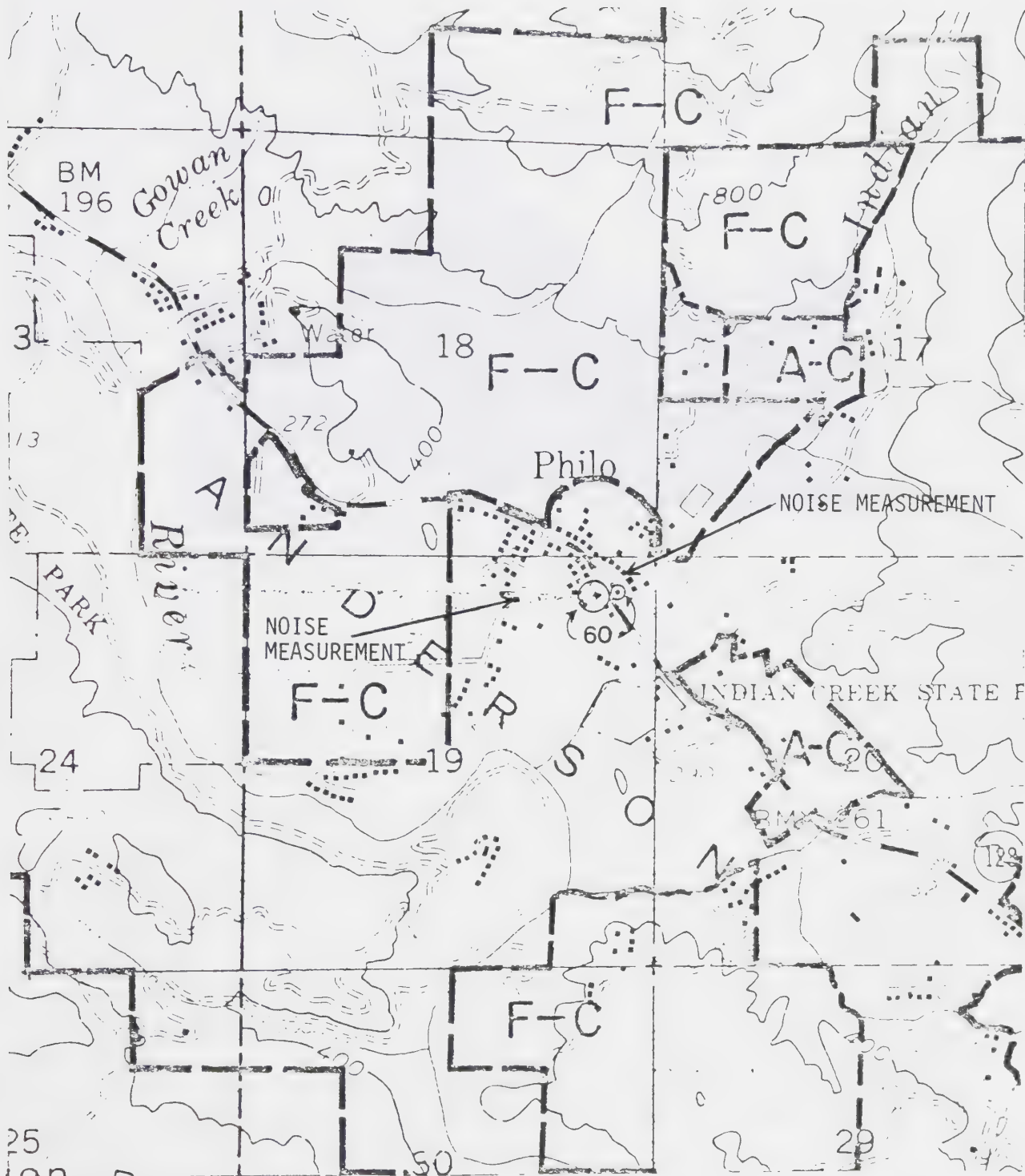
The measurement of the noise generated by the main mill activities (the head rig, trim saws, chipper etc.) was made at a distance of 900 feet from the mill. The daytime  $L_{eq}$  was 51 dBA. This noise level results in an  $L_{dn}$  of 46. The 60  $L_{dn}$  contour is 200 feet from the mill. It is interesting that although by urban or suburban standards this would be considered a quiet noise environment, in the context of a rural environment like Philo, the constant daytime noise level of 51 dBA appears "noisy." Indeed the  $L_{eq}$  of the

measurement location without the sawmill noise would probably be about 40 dBA. Although a 10 dBA difference in noise level is in itself dramatic, what is even more important is the fact that instead of the rural sounds associated with this environment, mechanical noise dominates and masks out the sound of distant birds, insects, etc.

The measurement of the planer noise was made at a distance of 225 feet from the planer building. The measured  $L_{eq}$  was 58 dBA, or an  $L_{dn}$  of 53 dBA. The 60  $L_{dn}$  contour is located 100 feet from the building.

Data for Noise Measurement  
Made at Location Shown on Contour Map (dBA)

		<u><math>L_1</math></u>	<u><math>L_{10}</math></u>	<u><math>L_{50}</math></u>	<u><math>L_{90}</math></u>	<u><math>L_{99}</math></u>	<u><math>L_{eq}</math></u>
Main Mill							
3/1/79	10:35-10:50am	57	54	50	47	45	51
Planer							
3/1/79	11:00-11:15am	62	60	58	56	54	58

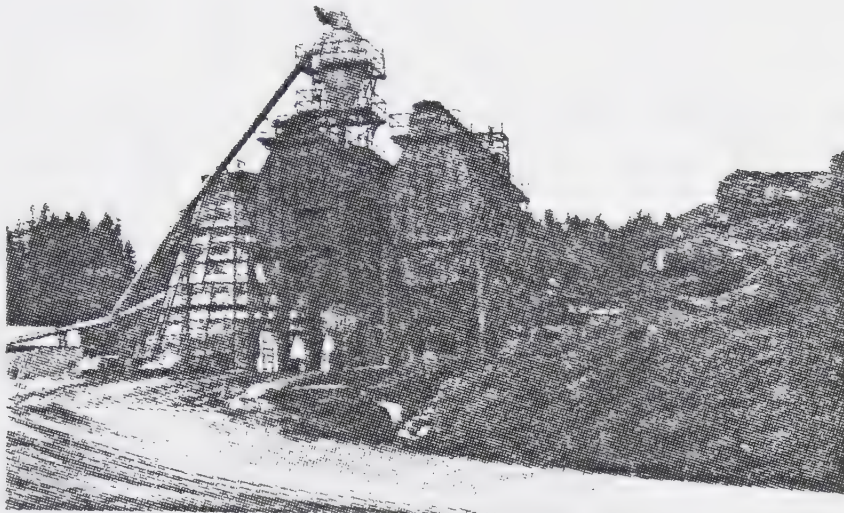


L<sub>dn</sub> NOISE CONTOURS  
PHILO LUMBER MILL

1" = 2000'





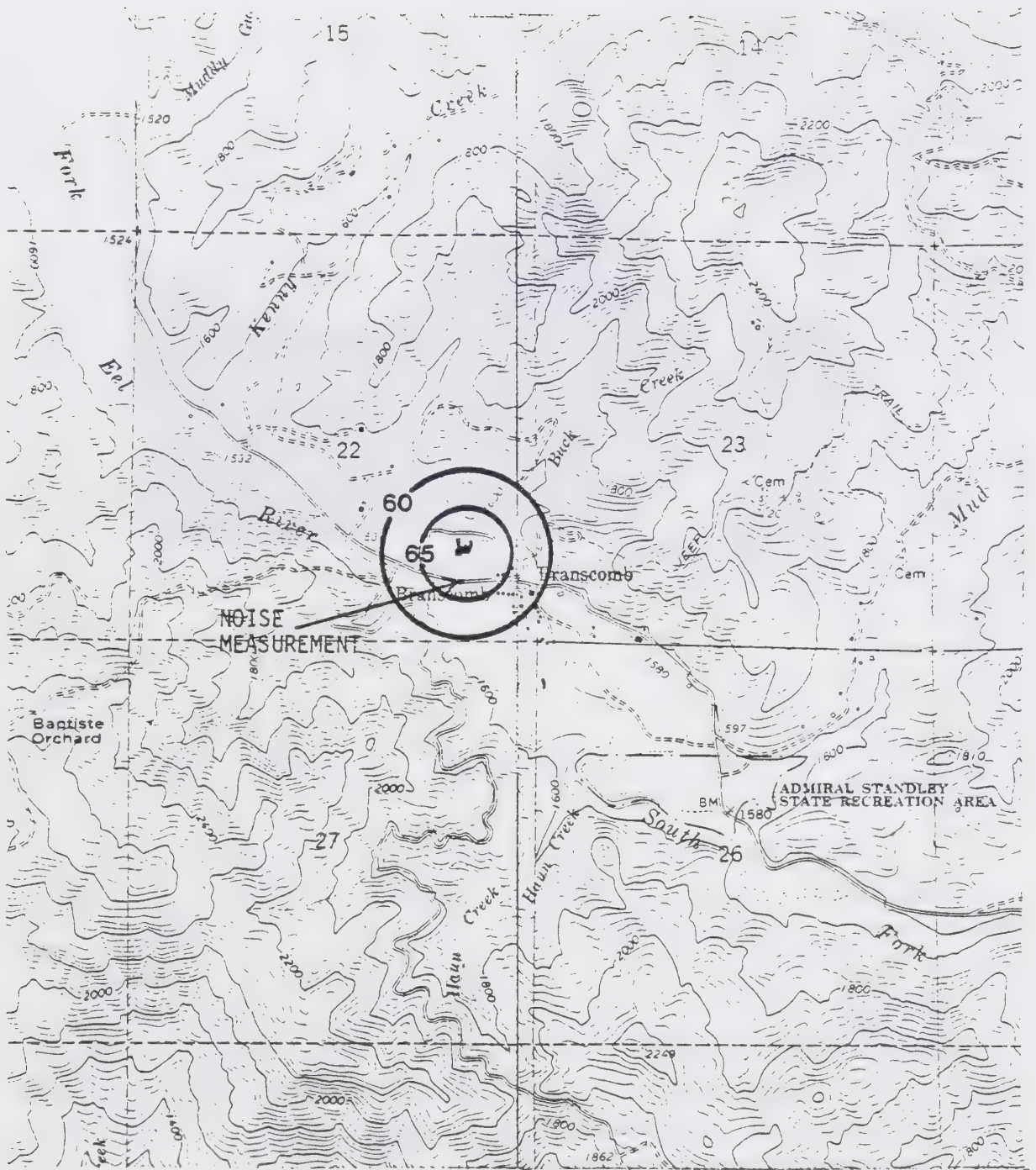


### 3. HARWOOD PRODUCTS MILL--BRANSCOMB

This mill is the central focus of the community of Branscomb. The mill operates two shifts a day. A noise measurement made 300 feet from the mill shows that the  $L_{eq}$  generated by the mill is 67 dBA. This results in an  $L_{dn}$  of 71 at this location. The  $L_{dn}$  70, 65 and 60 contours are 340, 600 and 1100 feet, respectively, from the mill. Most of the people that live in Branscomb are exposed to greater than 60  $L_{dn}$ . Consideration should be given to locating future development at a distance of greater than 1100 feet from the mill to insure compatibility with the mill noise.

Data for Noise Measurement  
Made at Location Shown on Contour Map (dBA)

		$L_1$	$L_{10}$	$L_{50}$	$L_{90}$	$L_{99}$	$L_{eq}$
2/27/79	2:45-3:00pm	72	68	66	65	64	67



$L_{dn}$  NOISE CONTOURS  
HARWOOD PRODUCTS LUMBER MILL

1" = 2000'

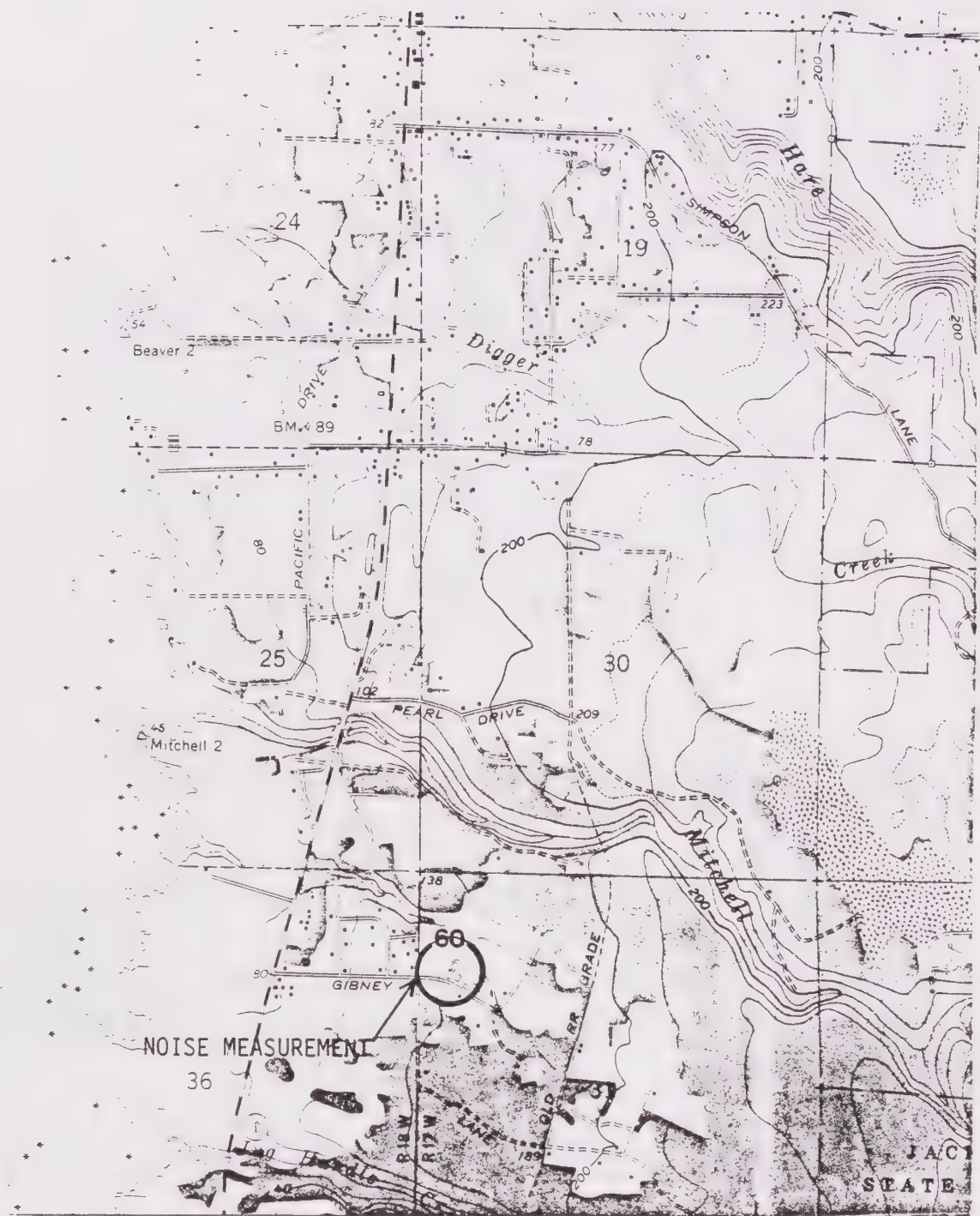
(No Photograph)

4. LOUISIANA PACIFIC STUD MILL--FORT BRAGG

This mill is on Gibney Lane about 4.5 miles south of Fort Bragg. The mill operates with a day shift only. Residences are located within 400 feet of the mill. A noise measurement made 400 feet from the mill shows that the  $L_{eq}$  during mill operation is 64 dBA. The  $L_{dn}$  at this location is 60 dB.

Data for Noise Measurement  
Made at Location Shown on Contour Map (dBA)

		$L_1$	$L_{10}$	$L_{50}$	$L_{90}$	$L_{99}$	$L_{eq}$
3/1/79	1:45-2:00pm	71	66	63	61	59	64



$L_{dn}$  NOISE CONTOUR  
LOUISIANA PACIFIC STUD MILL

1" = 2000'





##### 5. LOUISIANA PACIFIC PARTICLE BOARD PLANT--UKIAH

This plant is located to the north of Ukiah. The plant operates 24 hours a day. Day and night noise measurements were made in the residential area approximately 1300 feet to the west of the plant. The noise environment at this location is dominated by noise emanating from the plant. The noise level although relatively constant day and night, does exhibit a 2-3 dBA variation due to atmospheric effects. The daytime  $L_{eq}$  measured was 56 dBA and the nighttime  $L_{eq}$  was 59 dBA. This works out to 65  $L_{dn}$  at this location. The 60  $L_{dn}$  contour is therefore about 2300 from the the plant.

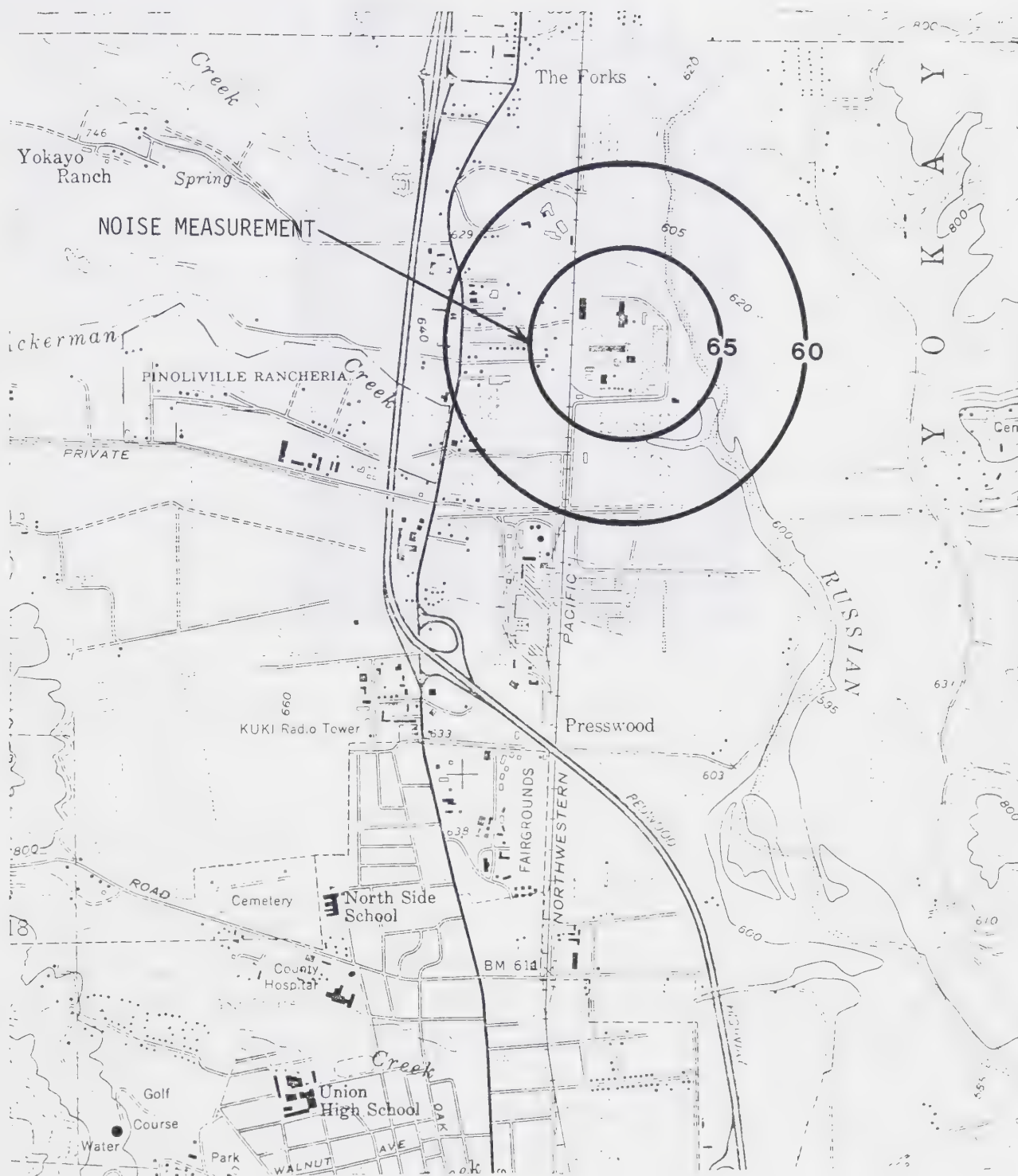
The residential area (trailer park) where the noise measurements were made are in an area where the  $L_{dn}$  reaches 65 dB. This is about 5 dBA noisier than the current design goals contained in the Mendocino County noise element, and



if possible, future residential development within the 60 L<sub>dn</sub> contour should be discouraged. If new residential development is planned within about 2300 feet of the plant, a noise study containing mitigating design recommendations should be required.

Data for Noise Measurement  
Made at Location shown on Contour Map (dBA)

		<u>L<sub>1</sub></u>	<u>L<sub>10</sub></u>	<u>L<sub>50</sub></u>	<u>L<sub>90</sub></u>	<u>L<sub>99</sub></u>	<u>L<sub>eq</sub></u>
2/8/79	11:30-11:45am	59	58	56	54	52	56
2/8/79	10:40-10:45pm	61	60	59	58	57	59



$L_{dn}$  NOISE CONTOURS  
LOUISIANA PACIFIC PARTICLE BOARD PLANT

1" = 2000'





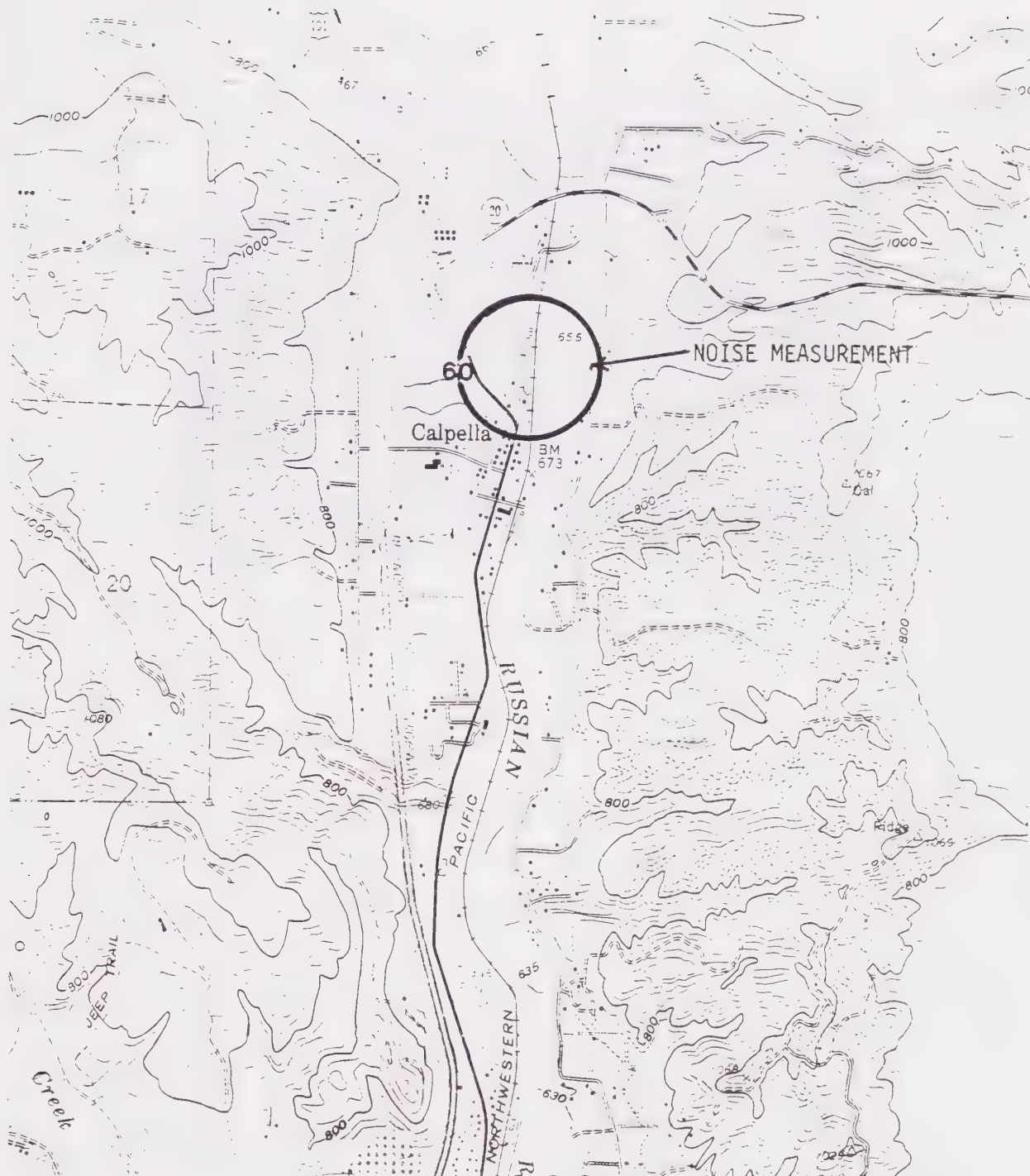
#### 6. LOUISIANA PACIFIC LUMBER MILL--CALPELLA

This mill is located off North State Street in Calpella. The mill has day and night shifts. Noise measurements were made during the day and night 800 feet east of the plant on East Side Calpella Road. During the day the noise environment is dominated by noise generated by a cyclone-separator mounted atop the main mill building and its associated fan. During the night this fan was not operating. The daytime  $L_{eq}$  was 58 dBA and the nighttime  $L_{eq}$  was 54 dBA. During the night equipment housed inside the mill buildings were the major noise generators. The  $L_{dn}$  at this location is 61 dB and the 60  $L_{dn}$  contour is 900 feet from the center of the plant.

Data for Noise Measurement  
Made at Location Shown on Contour Map (dBA)

		<u>L<sub>1</sub></u>	<u>L<sub>10</sub></u>	<u>L<sub>50</sub></u>	<u>L<sub>90</sub></u>	<u>L<sub>99</sub></u>	<u>L<sub>eq</sub></u>
2/8/79	12:15-12:30pm	60	59	58	57	57	58
2/8/79	10:34-10:49pm	57	56	54	53	52	54

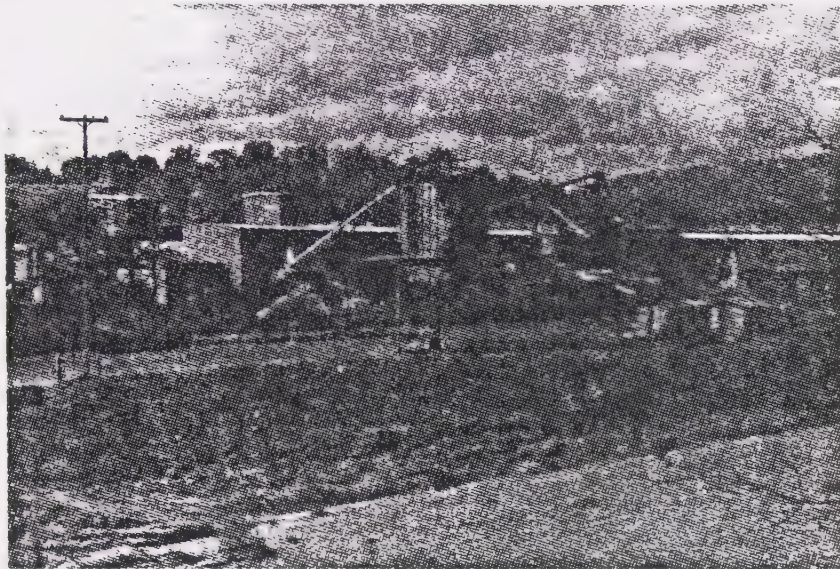




$L_{dn}$  NOISE CONTOUR  
LOUISIANA PACIFIC LUMBER MILL

1" = 2000'





#### 7. MASONITE LUMBER MILL--CALPELLA

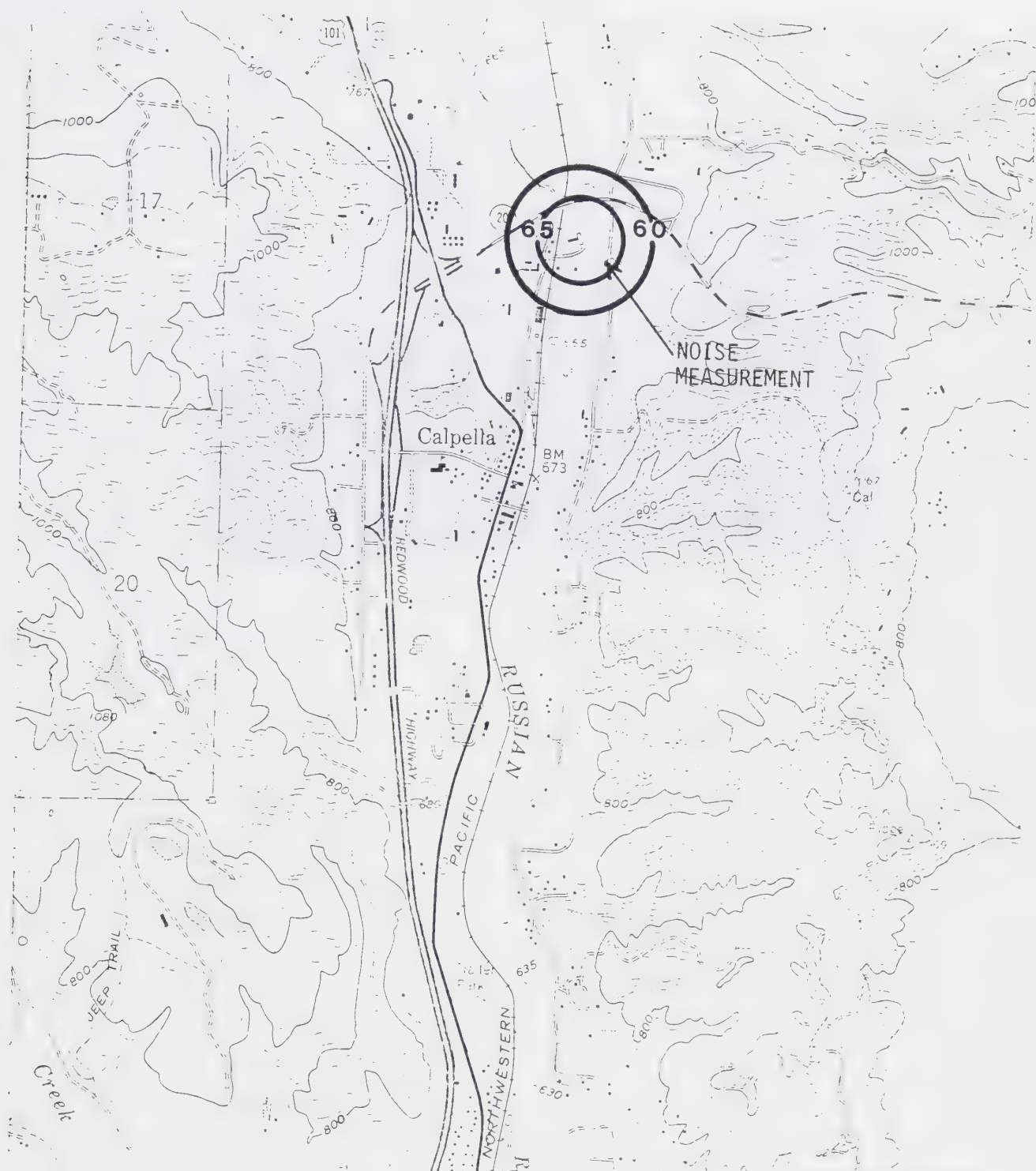
This mill is located just north of the Louisiana Pacific Mill in Calpella. The mill operates day and night shifts. Day and night noise measurements were made about 500 feet east of the mill on East Side Calpella Road. The dominant noise source noted at this mill was the chipper during the day and night. The day  $L_{eq}$  is 62 dBA and night  $L_{eq}$  is 61 dBA. The  $L_{dn}$  is 66 dB. The 65  $L_{dn}$  contour is 550 feet from the mill and the 60  $L_{dn}$  contour is 1000 feet from the mill.

One farm house is presently located within the 60  $L_{dn}$  contour. The remaining land uses within the 60  $L_{dn}$  contour are industrial or vacant, and are compatible with the existing noise environment.

Data for Noise Measurement  
Made at Location Shown on Contour Map (dBA)

		<u>L<sub>1</sub></u>	<u>L<sub>10</sub></u>	<u>L<sub>50</sub></u>	<u>L<sub>90</sub></u>	<u>L<sub>99</sub></u>	<u>L<sub>eq</sub></u>
2/8/79	12:30-12:45pm	66	64	61	58	57	62*
2/8/79	10:15-10:30pm	66	64	59	57	57	61

\*L<sub>eq</sub> estimated to be 58 without chipper.



$L_{dn}$  NOISE CONTOURS  
MASONITE LUMBER MILL

1" = 2000'







#### 8. MASONITE HARDBOARD PLANT--UKIAH

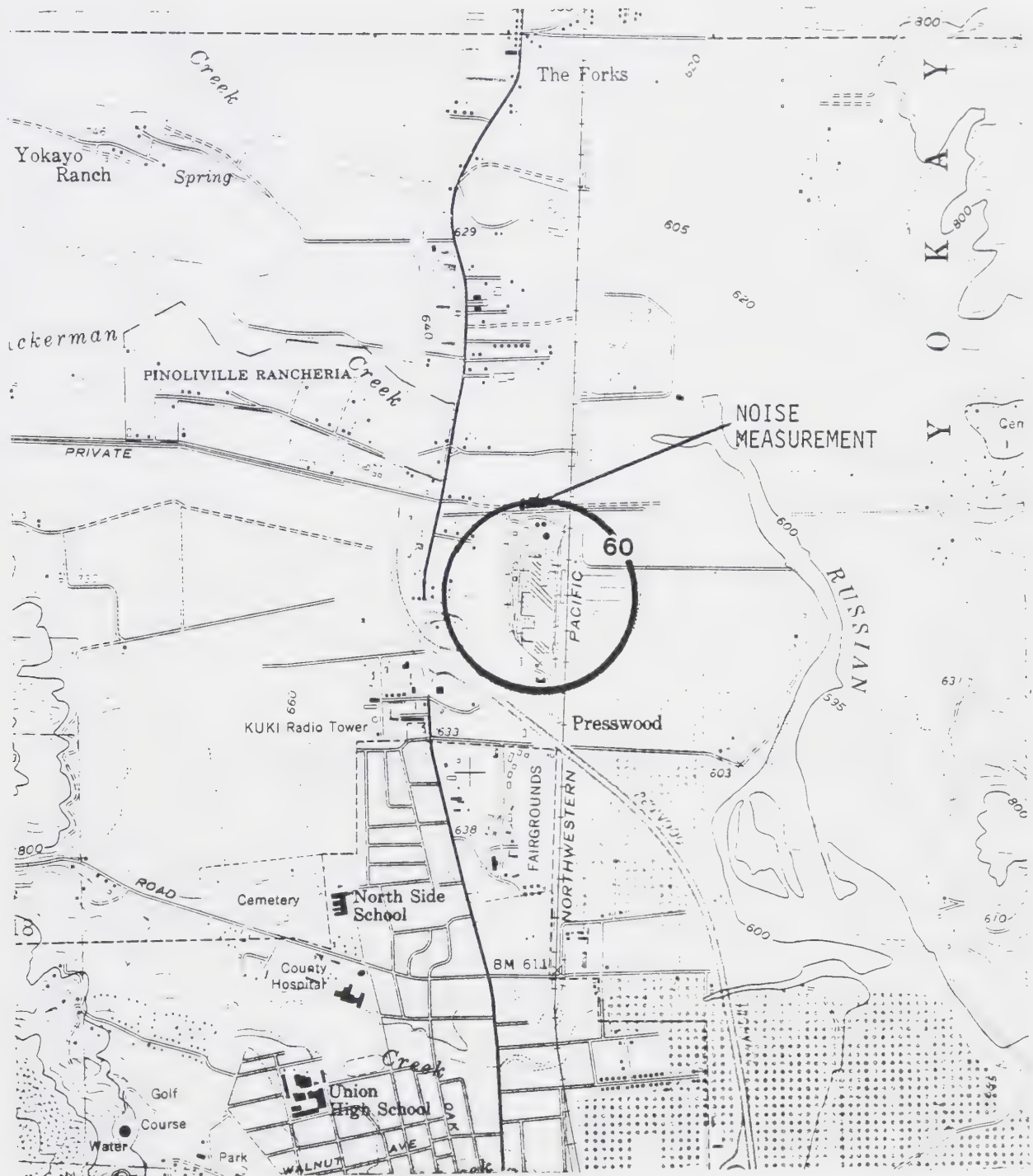
The Masonite Hardboard Plant is located just north of Ukiah. The plant operates day and night shifts. Noise measurements were made during the two shifts at the northern boundary of the plant, approximately 1100 feet from the center of the plant. The daytime  $L_{eq}$  was 53 dBA and the nighttime  $L_{eq}$  was 56 dBA. This resulted in an  $L_{dn}$  of 61 dB. Based upon the measurements, the 60  $L_{dn}$  contour is 1200 feet from the plant.

The land uses surrounding the plant are compatible with the noise generated by the plant. The northern and eastern boundaries of the plant abut agricultural uses and the southern and western boundaries of the plant primarily abut highway and commercial activities. There are a few scattered residents to the west located within the plant's 60  $L_{dn}$  contour.

However, at these residences the noise environment is dominated by noise generated by Highway 101 and North State Street.

Data for Noise Measurement  
Made at Location shown on Contour Map (dBA)

		<u>L<sub>1</sub></u>	<u>L<sub>10</sub></u>	<u>L<sub>50</sub></u>	<u>L<sub>90</sub></u>	<u>L<sub>99</sub></u>	<u>L<sub>eq</sub></u>
2/8/79	10:50-11:05pm	58	55	53	51	51	53
2/8/79	10:05-10:15pm	64	56	55	54	54	56



$L_{dn}$  NOISE CONTOUR  
MASONITE HARDBOARD PLANT

1" = 2000'





(No Photograph)

9. LOUISIANA PACIFIC LUMBER MILL--POTTER VALLEY

This mill is on the Eel River north of Potter Valley, and is surrounded by forest and mill related activities. The mill operates during daylight hours only. A daytime  $L_{eq}$  of 56 dBA was measured at a distance of about 1400 feet from the mill. This works out to an  $L_{dn}$  of 52 dB. The 60  $L_{dn}$  noise contour is located 600 feet from the mill.

Data for Noise Measurement  
Made at Location Shown on Contour Map (dBA)

		$L_1$	$L_{10}$	$L_{50}$	$L_{90}$	$L_{99}$	$L_{eq}$
2/9/79	10:40am-10:55am	62	59	56	54	52	56



$L_{dn}$  NOISE CONTOUR  
LOUISIANA PACIFIC LUMBER MILL

1" = 5200'

(No Photograph)

10. LOUISIANA PACIFIC MILL--COVELO

This mill is presently (March 1979) shut down pending conversion to new facilities. According to a Louisiana Pacific spokesman, this new plant will incorporate "state-of-the-art" noise control measures. When the new plant is in operation it will be interesting to compare the noise generated by this plant with the other mills in Mendocino County to determine the effectiveness of these noise control measures.



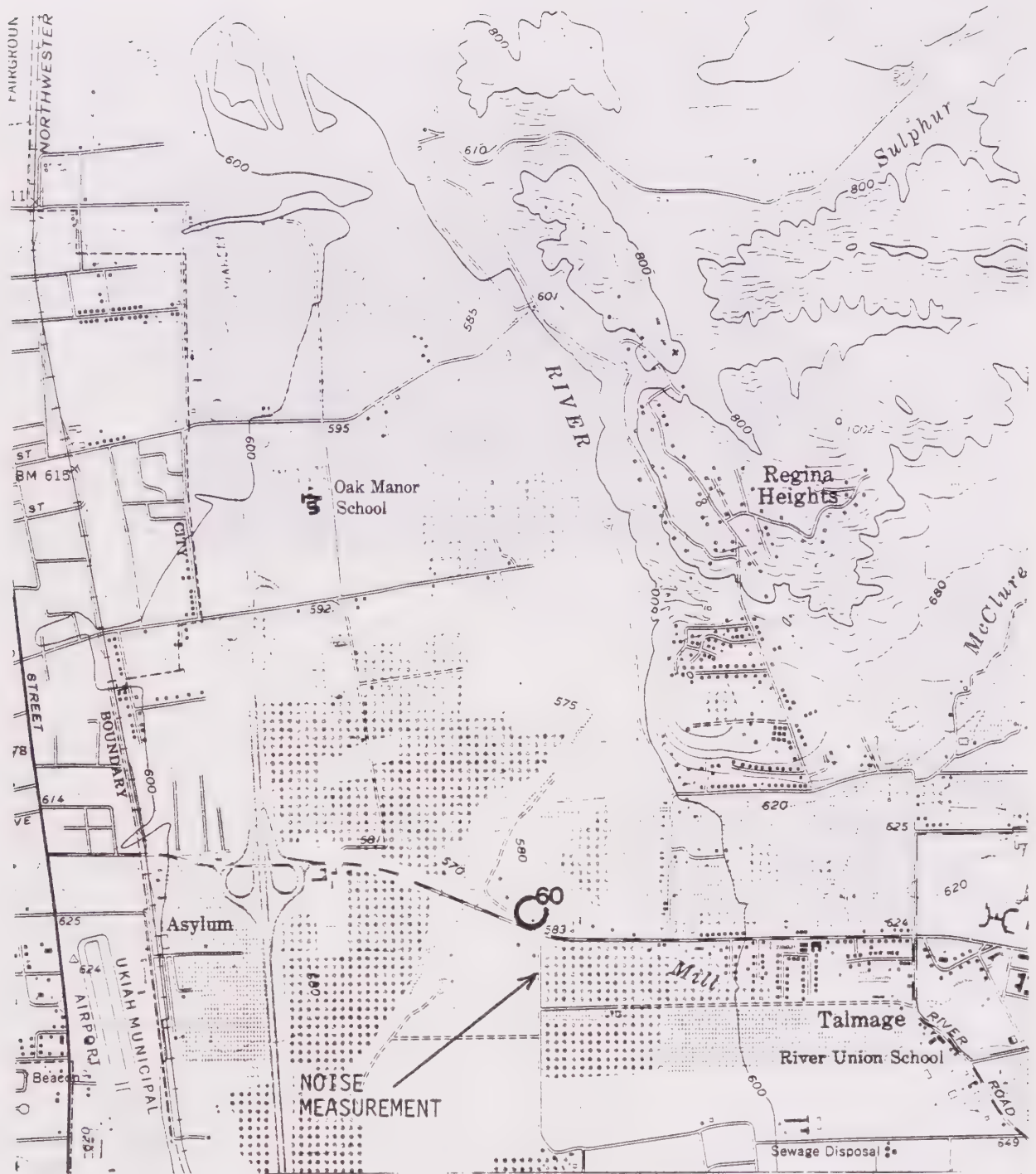




#### 11. FORD GRAVEL COMPANY--UKIAH

The Ford Gravel Company is a concrete batch plant operation, located on the Talmage Highway near Ukiah. The major noise sources are Redi-mix trucks and the screens and associated shakers used to size aggregate. The trucks are by far the noisiest pieces of equipment on site, generating up to 86 dBA at a distance of 50 feet. A 15 minute  $L_{eq}$  of 54 dBA was measured at a distance of 600 feet from this plant. During this measurement several trucks were loaded and left the yard, and the screening equipment was running. As this is a daytime operation the  $L_{dn}$  at the location would be about 50 dB, and the 60  $L_{dn}$  contour would be located within 200 feet of the plant.





$L_{dn}$  NOISE CONTOUR  
FORD GRAVEL COMPANY

1" = 2000'



## 12. PARNUM PAVING COMPANY--UKIAH

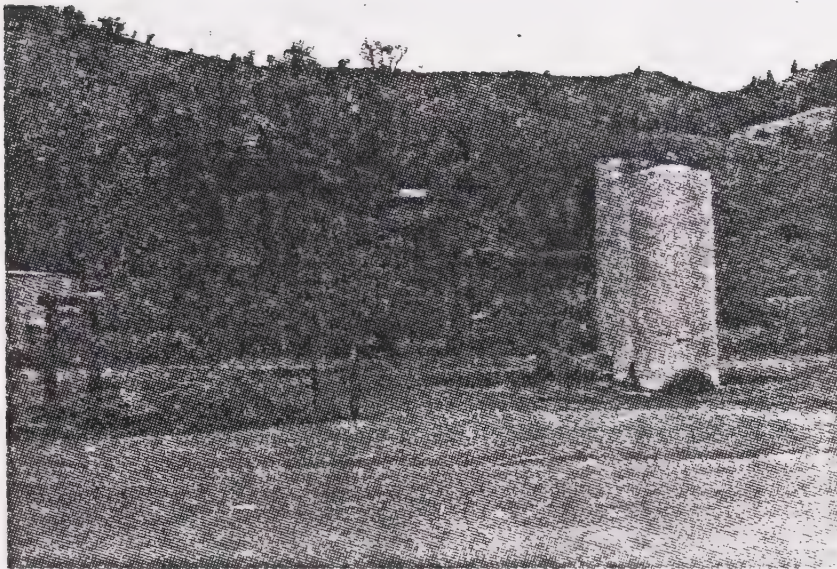
The Parnum Paving Company is an asphalt batch plant operating during the daytime only. A noise measurement made 600 feet from the plant shows that the  $L_{eq}$  during plant operation is 56 dBA at this distance. This is equivalent to an  $L_{dn}$  of 52 dB. The 60  $L_{dn}$  contour is located 250 feet from the plant. Residences are located near enough to the plant such that noise from the plant dominates the noise environment. No homes are located within the 60  $L_{dn}$  contour.

Data for Noise Measurement  
Made at Location Shown on Contour Map (dBA)

		$L_1$	$L_{10}$	$L_{50}$	$L_{90}$	$L_{99}$	$L_{eq}$
2/27/79	11:05-11:20am	60	57	55	54	54	56

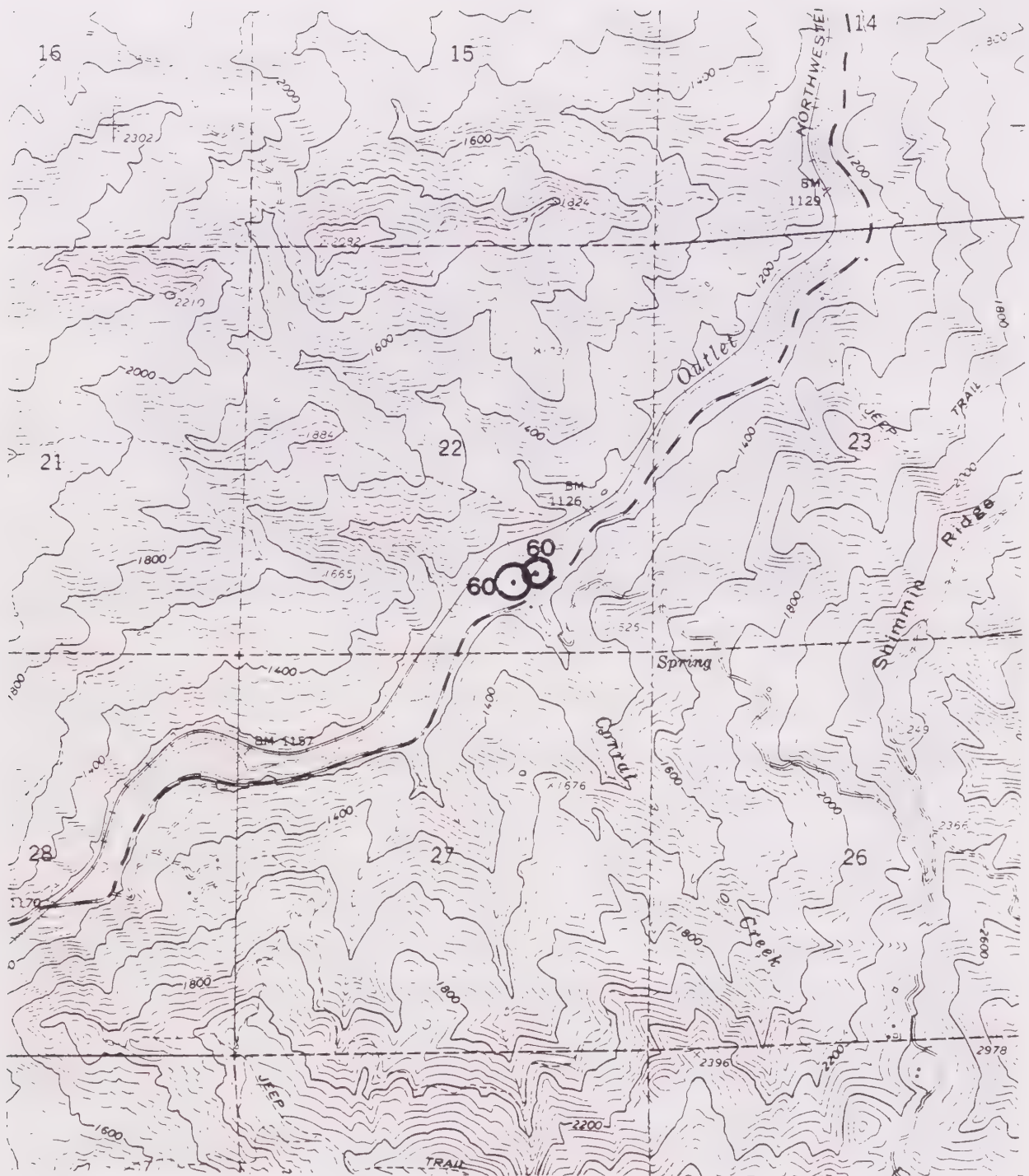






### 13. MENDOCINO AGGREGATES--LONGVALE

When visited, the Mendocino Aggregates Company was not in operation. Based on the contours developed for the Ford Gravel Company in Ukiah it is estimated that the 60  $L_{dn}$  contour is located 200 feet from the plant. No incompatible land uses are located within the 60  $L_{dn}$  contour. Indeed only one home is located within a mile of this plant. If, through land use planning, future development is avoided very near the plant, this operation should continue to be free of noise conflict problems.



L<sub>dn</sub> NOISE CONTOURS  
MENDOCINO AGGREGATES COMPANY

1" = 2000'



(No Photograph)

14. BAXMAN SAND AND GRAVEL COMPANY--FORT BRAGG

The Baxman Sand and Gravel Company is located north of Ft. Bragg just west of Highway 1. The Company operates both a sand and gravel operation and an asphalt batching operation.

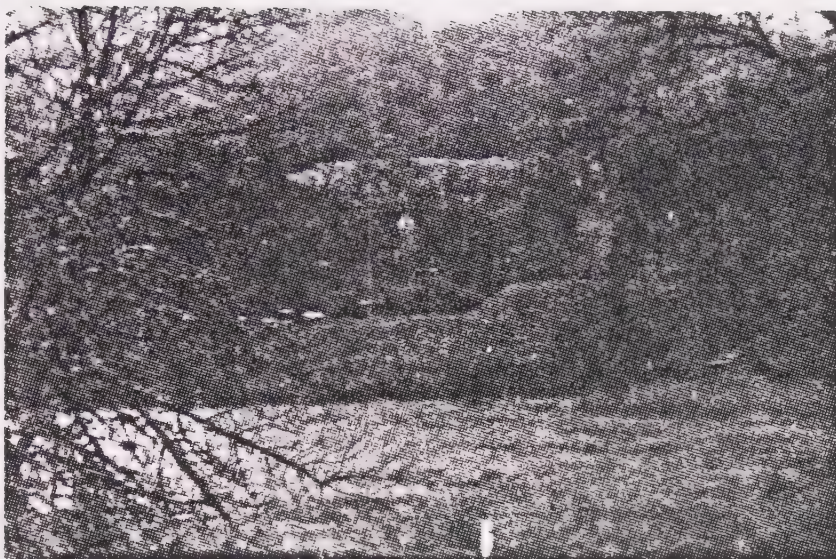
The Baxman Sand and Gravel Company operates during the day only. The site was visited twice during winter, but due to a seasonal slowdown was not in operation at the time. Based on measurements made at similar facilities the 60  $L_{dn}$  noise contour for the sand and gravel operation would be located about 200 feet from the sorting plant and the 60  $L_{dn}$  contour for the asphalt batch plant would be located about 250 feet from this facility.

There are several homes and motels near the plant but these are more severely impacted by highway noise than by noise generated by the plant.



L<sub>dn</sub> NOISE CONTOURS  
BAXMAN GRAVEL COMPANY

1" = 2000'



#### 15. REDWOOD VALLEY GRAVEL PRODUCTS--REDWOOD VALLEY

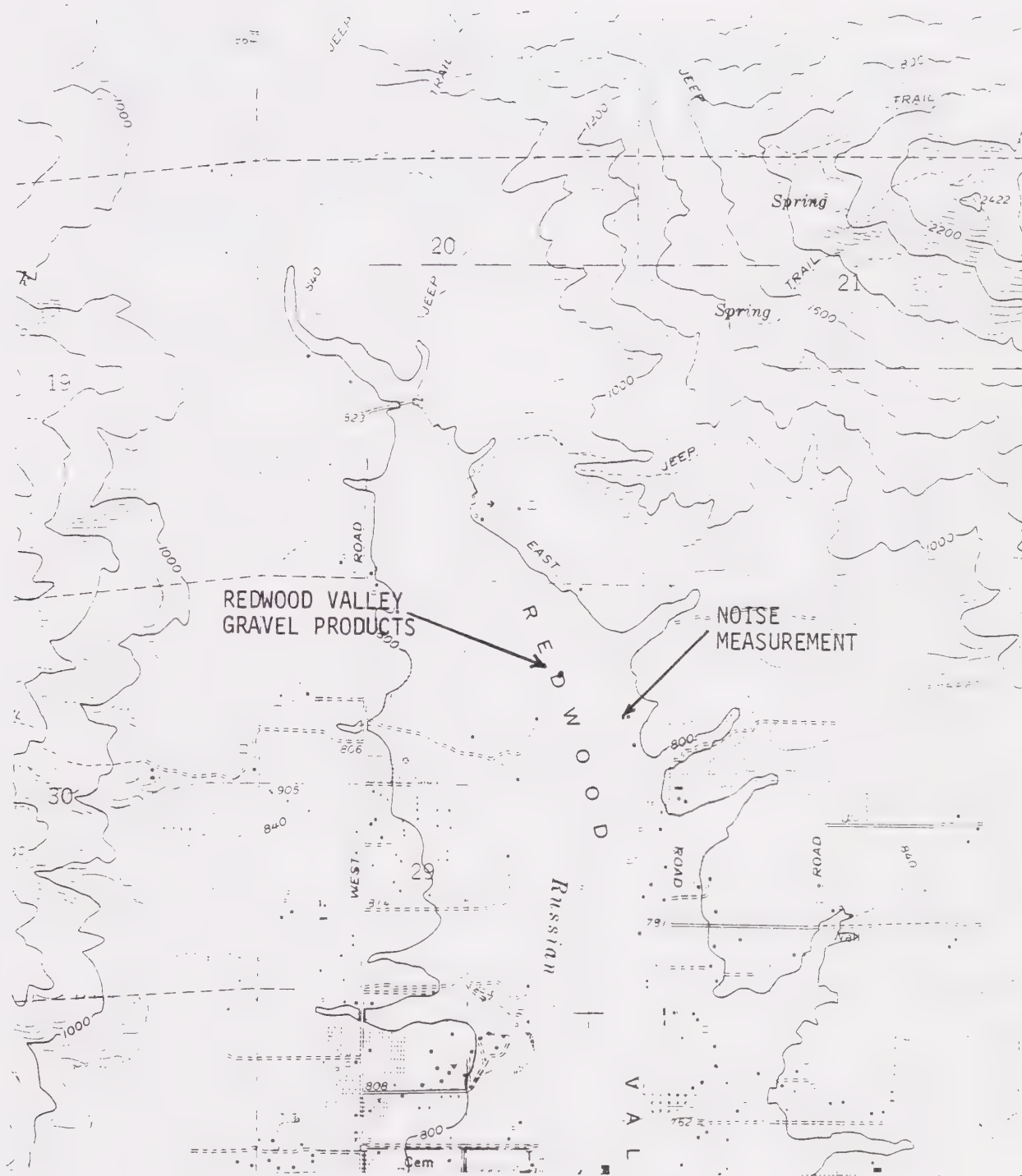
This aggregate plant is located north of Redwood Valley. The plant operates only during the daylight hours and for about 3 months out of the year. A measurement at the nearest adjacent residence (about 900 feet away) during plant operation is 48 dBA. The major noise generator is the screen sorter and associated equipment. The  $L_{dn}$  due to the gravel plant at this location on those days when the plant is operating is 43 dB. An annual average 60  $L_{dn}$  contour for this operation does not exist off of plant property.

Because of the quiet background noise level when the plant is not operating (30-40 dBA in the absence of traffic) the noise generated by the plant seems unusually loud. The reason for this is that when the plant is operating, the natural sounds of insects, birds and wind in the trees

are replaced by mechanical noise. As the plant increases the noise environment by about 10 dBA, complaints from residents would be expected even though the absolute noise level is low.

Data for Noise Measurement  
Made at Location Shown on Contour Map (dBA)

		L <sub>1</sub>	L <sub>10</sub>	L <sub>50</sub>	L <sub>90</sub>	L <sub>99</sub>	L <sub>eq</sub>
2/9/79	11:10-11:15am	—	50	47	46	—	48



REDWOOD VALLEY GRAVEL PRODUCTS

1" = 2000'





## E. OTHER SOURCES OF NOISE

No systematic research has been done on other noise sources in Mendocino County as problems have not been widespread or severe enough to create public pressure for detailed surveys or research. Other sources of disturbing sounds include barking dogs, motorcycles and bikes, sirens on emergency vehicles and mill whistles which blow to announce coffee breaks and lunch periods. A few complaints have been directed at industrial noise. These were focused on plants located within incorporated cities rather than those located out in the country.

Other areas of complaint involved various recreational uses such as high-powered boats at Lake Mendocino, gun clubs, auto racing at the fairgrounds, and off-road vehicles including but not limited to motorcycles.

Noise from the power boats is currently regulated by the Sheriff's Office under the Harbor and Navigations Code. Said code governs exhausts of every combustion engine used on any motorboat. Exhausts shall be effectively muffled at all times to prevent any excessive or unusual noise and as may be necessary to comply with the code noise limitations, Sec. 654.04 which states that in no case shall a person operate any motorboat in or upon the inland waters in such a manner as to exceed 86 dBA measured at a distance of 50 feet from the motorboat, except as otherwise advised. The one exception to this provision is that of an authorized motorboat competition.

Off-road vehicular noise, including that emitted by motorcycles, is currently under state or federal regulation in the form of muffler requirements, and prohibitions against alterations of these systems. Trespassing on private property is the responsibility of local law enforcement.

Noise from the discharge of firearms at trap shooting clubs shows high impulse levels at distances of up to 1/4 mile, depending on terrain. At distances of 1 mile or more, these levels are much lower, only a few dBA above normal noise. However, this shotgun noise is still audible, and causes extreme annoyance to many people due to its intermittent, impulse nature.

Racing car noise from the Ukiah fairgrounds has been a source of complaint in the past. During summer months auto racing may occur every weekend, lasting until 11:00 p.m. or later. Increases in noise levels can be as much as 30 dBA above normal night-time ambient levels. During 1980, there was no regularly scheduled racing and mufflers are required this year. Consequently, it is unknown whether auto racing will continue to be an annoyance.

The Federal Environmental Protection Agency recently published a list of noise annoyances in Boulder, Colorado. This list, compiled through surveys of citizens, shows motorcycles as the most extensive and intensive annoyance with barking dogs and emergency sirens rated 4th and 6th, respectively. With the exception of neighborhood noise

and construction, the other annoyances in Boulder had to do with transportation modes already discussed in this report. Although mill whistles were not mentioned in Boulder, the sources of noise annoyance in Mendocino County and Boulder appear similar. This is probably true in most parts of the country though the scale of the problem will vary immensely from place to place. The complete list from Boulder is given below as general information.

Noise sources in Descending Order of Annoyance - Boulder, Colo., 1972:

- |                 |                             |
|-----------------|-----------------------------|
| 1. motorcycles  | 6. emergency vehicle sirens |
| 2. cars         | 7. neighborhood noise       |
| 3. trucks       | 8. construction             |
| 4. barking dogs | 9. aircraft                 |
| 5. buses        | 10. railroads               |

#### F. NOISE MEASUREMENTS AT SENSITIVE RECEPTORS

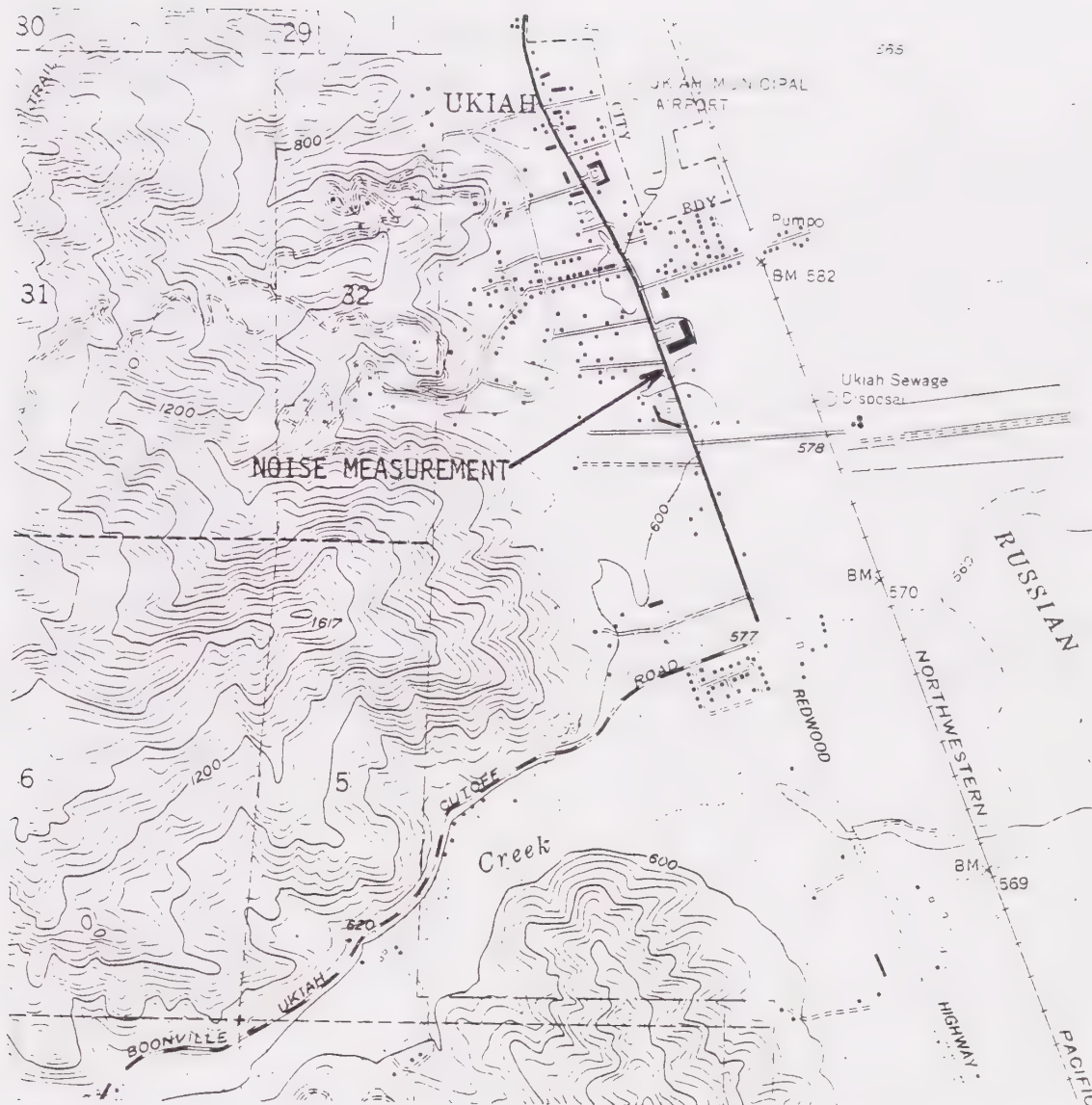
The County of Mendocino has identified the following noise-sensitive receptors:

1. Hacienda Convalescent Hospital
2. Calpella Elementary School
3. Deep Valley Christian School
4. Anderson Valley Elementary School
5. The Noyo Headlands Future Residential Development

Noise measurements have been made at each of these locations to provide baseline information against which to assess the noise impacts of future actions. The noise environment at each of these locations is as follows.







# 1. HACIENDA CONVALESCENT HOSPITAL

A 24-hour measurement was made adjacent to the hospital, 63 feet from the centerline of the near lane of South State Street. The convalescent hospital itself is about 46 feet from the centerline of the near lane. South State Street is a heavily traveled road with a 35 mph speed limit. The hospital is also exposed to aircraft flyover noise. An  $L_{dn}$  of 65 dB was measured which is equivalent to

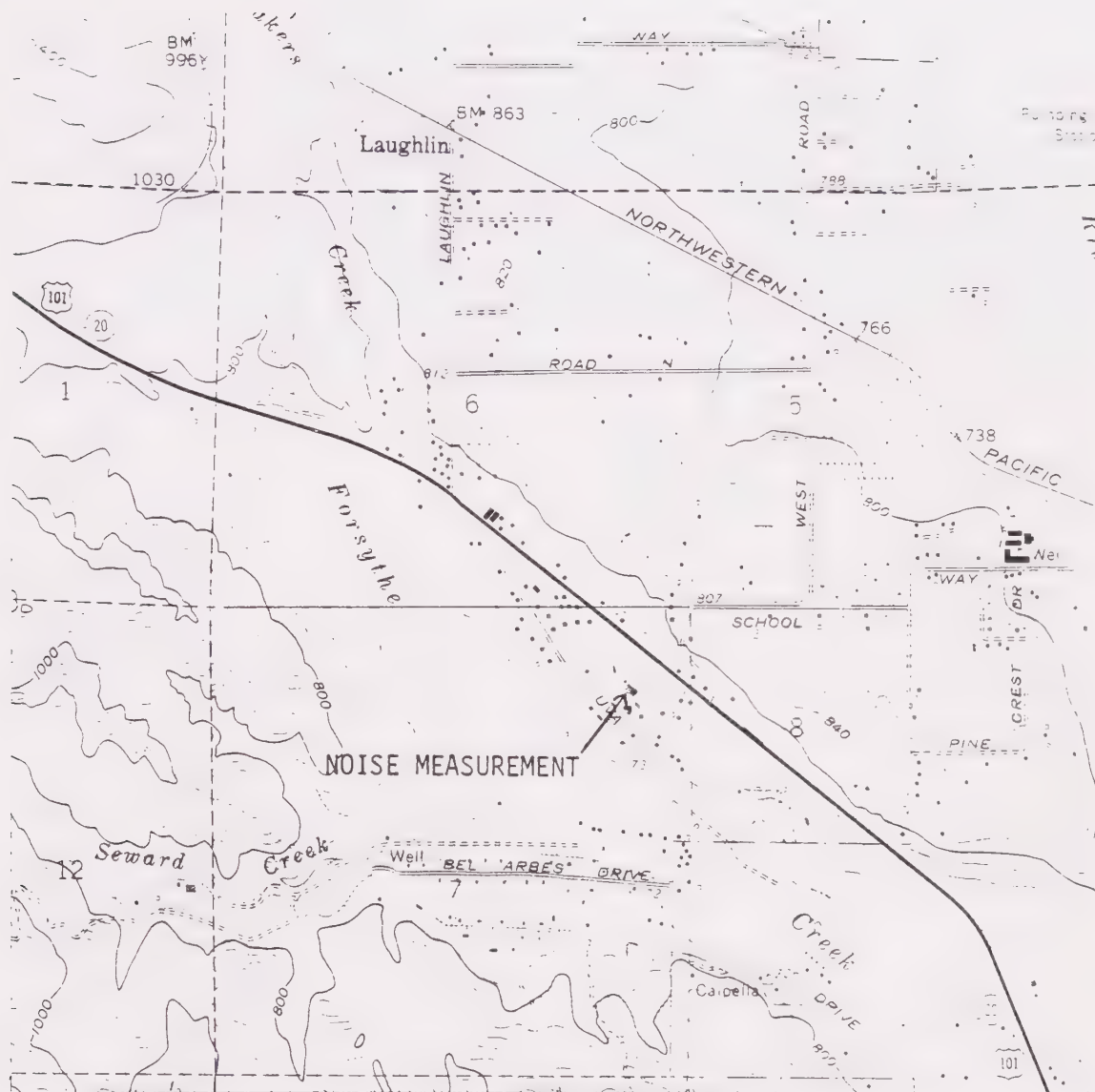
an  $L_{dn}$  of 67 dB at the building facade. It appears from the way that the curb along South State Street was put in that the County might eventually widen this road. If the road were widened, the centerline of the near lane would be 12 feet closer and the noise levels would be higher in the bedrooms facing South State Street. As this hospital is presently exposed to more noise than is recommended by the noise and land use compatibility guidelines contained in the noise element, ways to reduce the noise exposure at the hospital should be investigated. Increasing the noise exposure should be avoided. The fact that the convalescent hospital is indoor-oriented may somewhat compensate for the relatively high outdoor levels. If the indoor noise level were to become a problem, acoustical insulation would serve as a mitigation. Indoor noise levels were not measured.



## 2. CALPELLA ELEMENTARY SCHOOL

The noise environment at this location is dominated by traffic on Highway 101 and to a lesser extent by traffic on Moore Avenue. The  $L_{eq}$  at the school in the middle of the day when children are present is 55 dBA. The  $L_{dn}$  is 61 dB. Maximum truck noise levels range from 57 to 67 dBA.





### 3. DEEP VALLEY CHRISTIAN SCHOOL

The Deep Valley Christian School is approximately 400 feet from the centerline of the near lane of Highway 101. The noise environment at this location, like that at the Calpella Elementary School, is dominated by traffic. An  $L_{eq}$  of 55 dBA was measured in the middle of the afternoon with maximum truck noise levels ranging from 55 to 63 dBA. The  $L_{dn}$  at this location is 61 dB.







traffic increases substantially it is possible that class-room or schoolyard activities might be interfered with. If complaints are received from the school, steps should be taken to eliminate the noise problem, either through erection of a noise barrier or acoustical isolation of the classrooms. Another solution would be to reduce the wheel noise of traffic on Highway 128 by imposing or reducing the speed limit.



#### G. COMMUNITY NOISE EXPOSURE INVENTORY

Based upon available census tract information and the noise contours developed for the Mendocino County Noise Element, few people in the unincorporated areas of Mendocino County are exposed to greater than 60 Ldn. Because these contours are generally quite close to the noise sources, it is difficult to make an exact determination of the number of persons exposed to greater than 60 Ldn, but it is estimated that it is less than 10 percent of the County population.\* As it is not projected that noise levels in Mendocino County will increase significantly by 1990, it is not expected that this percentage will change significantly.

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\*See letter from Russell B. DuPree, Noise Control Engineer, Office of Noise Control, California Department of Health Services in the appendix.



#### IV. GOALS & POLICIES

In the various policy conferences held in Mendocino County many people expressed appreciation for the peace, quietness and tranquility which are so basic to the high quality of life here. References to noise as a problem usually applied to specific and limited annoyances or to the unfortunate but necessary noise associated with the lumber mills or agriculture. Most people were aware of measures taken by the mills to reduce noise. There was also a desire to keep high speed noisy highways out of such quiet places as Anderson Valley. No specific policies were spelled out but the discussions imply that, as a policy, the County desires to protect its environment from noise, the unwanted sound which could intrude as population increases; further, it wants to eliminate existing noise problems whenever feasible.

In addition to the general statement above, the following policies have been derived from discussion with officials and citizens:

1. Noise shall be one of the factors to be considered in all future land use and development decisions.
2. Existing land uses shall be protected from the intrusion of new noise, protection will take various forms and may include zoning controls, requiring buffer strips around new uses or other appropriate treatment.
3. Lumbering and agriculture are basic to the economy of Mendocino County and necessary noise associated with them must be tolerated; however residential buyers should be informed of the noise potential of sites affected by these industries.
4. The Division of Environmental Health of the County Health Department should undertake a program of education and, where feasible, give technical advice to assist operators of noisy equipment to reduce noise emissions.
5. The County shall make efforts to buy automobiles and other equipment which have the lowest sound emissions and to maintain all equipment so as to reduce sound emissions as far as feasible. In general, the County shall use good practices and keep abreast of all new advances in the field.
6. The County shall work with the State Department of Transportation to mitigate the effects of existing highway noise and to avoid future noise problems through careful analysis at the design stage of all new highway improvements.
7. County efforts for noise suppression and reduction shall be coordinated with those of the cities; this can best be done through the County Health Department, through the Division of Environmental Health since it has jurisdiction in all areas of Mendocino County.

8. The County should adopt a noise control ordinance consistent with the stated policies and within its capacity to enforce equitably.
9. Noise contours shall be determined for each of the public airports in the County to aid in maintaining compatible land uses in airport vicinities.
10. The County shall determine whether or not noise levels at private airstrips warrants the preparation of noise contours.

#### A. NOISE STANDARDS

The standards given below are suggested by the United States Environmental Protection Agency. The rationale for the standard is that private residential uses are more sensitive than public commercial and industrial uses and therefore more stringent noise standards are justified to protect homes.

TABLE 2. EXTERIOR NOISE LIMITS

Zone	Time	Noise Level (dBA) Residential Community Environmental Classification		
		Rural Suburban	Suburban	Urban
One and Two Family Residential	10 pm - 7 am 7 pm - 10 pm 7 am - 7 pm	40 45 50	45 50 55	50 55 60
Multiple Dwelling Residential	10 pm - 7 am 7 am - 10 pm	45 50	50 55	55 60
Limited Commercial Some Multiple Dwellings	10 pm - 7 am 7 am - 10 pm	55 60		
Commercial	10 pm - 7 am 7 am - 10 pm	60 65		
Light Industrial	Anytime	70		
Heavy Industrial	Anytime	75		

More detailed standards covering all activity areas and land uses within the community are needed. The chart on Page VI-76 sets up acceptable ranges of noise acceptability for all land uses. It was developed after studying the standards of various cities and in consultation with the Mendocino County Health Department. The chart defines four ranges of acceptability and shall be used to determine suitability of areas for land uses of various noise sensitivities.

The Division of Environmental Health in the County Health Department has also established some preferred levels or goals for the more sensitive uses and differentiated between day and night levels.

Preferred Level of Sound (dBA) Ldn

Residential	40 at night 50 during day
Commercial	55 at night 60 during day

The goal is lower than that deemed acceptable on the preceding table. It points up the fact that "acceptable" is not perfect and that if there is wide community agreement and determination, there is justification for aspiring to higher standards than those on the table. This fact and the need to distinguish between day and night levels will need to be considered if the County decides to pass legislation concerning noise.

The chart on Page VI-78 utilizes the proposed noise standards to form a matrix of compatibility for land uses based on noise generation and tolerance levels for all activities.

In the small unincorporated towns and rural portions of the County some of the relationship recommendations implicit in the matrix will have little immediate application, yet even with the slow growth and very gradual urbanization projected for Mendocino County, potential conflicts will arise with increasing frequency and the matrix will prove a useful guide to land use and development decisions.



## LAND USE COMPATABILITY FOR COMMUNITY NOISE ENVIRONMENTS

LAND USE CATEGORY	COMMUNITY NOISE EXPOSURE L <sub>dn</sub> OR CNEL, dB					
	55	60	65	70	75	80
RESIDENTIAL – LOW DENSITY SINGLE FAMILY, DUPLEX, MOBILE HOMES						
RESIDENTIAL – MULTI. FAMILY						
TRANSIENT LODGING – MOTELS, HOTELS						
SCHOOLS, LIBRARIES, CHURCHES, HOSPITALS, NURSING HOMES						
AUDITORIUMS, CONCERT HALLS, AMPHITHEATRES						
SPORTS ARENA, OUTDOOR SPECTATOR SPORTS						
PLAYGROUNDS, NEIGHBORHOOD PARKS						
GOLF COURSES, RIDING STABLES, WATER RECREATION, CEMETERIES						
OFFICE BUILDINGS, BUSINESS COMMERCIAL AND PROFESSIONAL						
INDUSTRIAL, MANUFACTURING UTILITIES, AGRICULTURE						

### INTERPRETATION



#### NORMALLY ACCEPTABLE

Specified land use is satisfactory, based upon the assumption that any buildings involved are of normal conventional construction, without any special noise insulation requirements.



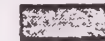
#### CONDITIONALLY ACCEPTABLE

New construction or development should be undertaken only after a detailed analysis of the noise reduction requirements is made and needed noise insulation features included in the design. Conventional construction, but with closed windows and fresh air supply systems or air conditioning will normally suffice.



#### NORMALLY UNACCEPTABLE

New construction or development should generally be discouraged. If new construction or development does proceed, a detailed analysis of the noise reduction requirements must be made and needed noise insulation features included in the design.



#### CLEARLY UNACCEPTABLE

New construction or development should generally not be undertaken.

### CONSIDERATIONS IN DETERMINATION OF NOISE-COMPATIBLE LAND USE

#### A. NORMALIZED NOISE EXPOSURE INFORMATION DESIRED

Where sufficient data exists, evaluate land use suitability with respect to a "normalized" value of CNEL or L<sub>dn</sub>. Normalized values are obtained by adding or subtracting the constants described in Table 3 to the measured or calculated value of CNEL or L<sub>dn</sub>.

#### B. NOISE SOURCE CHARACTERISTICS

The land use-noise compatibility recommendations should be viewed in relation to the specific source of the noise. For example, aircraft and railroad noise is normally made up of higher single noise events than auto traffic but occurs less frequently. Therefore, different sources yielding the same composite noise exposure do not necessarily create the same noise environment. The State Aeronautics Act uses 65 dB CNEL as the criterion which airports must eventually meet to protect existing residential communities from unacceptable exposure to aircraft noise. In order to facilitate the purposes of the Act, one of which is to encourage land uses compatible with the 65 dB CNEL criterion wherever possible, and in order to facilitate the ability of airports to comply with the Act, residential uses located in Com-

munity Noise Exposure Areas greater than 65 dB should be discouraged and considered located within normally unacceptable areas.

#### C. SUITABLE INTERIOR ENVIRONMENTS

One objective of locating residential units relative to a known noise source is to maintain a suitable interior noise environment at no greater than 45 dB CNEL of L<sub>dn</sub>. This requirement, coupled with the measured or calculated noise reduction performance of the type of structure under consideration, should govern the minimum acceptable distance to a noise source.

#### D. ACCEPTABLE OUTDOOR ENVIRONMENTS

Another consideration, which in some communities is an overriding factor, is the desire for an acceptable outdoor noise environment. When this is the case, more restrictive standards for land use compatibility, typically below the maximum considered "normally acceptable" for that land use category, may be appropriate.

Table 3

Corrections to be Added to the  
Measured Community Noise Equivalent Level (CNEL)  
to Obtain Normalized CNEL

Type of Correction	Description	Amount of Correction to be Added to Measure CNEL in dB
Seasonal Correction	Summer (or year-round operation).	0
	Winter only (or windows always closed).	- 5
Correction for Outdoor Residual Noise Level	Quiet suburban or rural community (remote from large cities and from industrial activity and trucking).	+10
	Quiet suburban or rural community (not located near industrial activity).	+ 5
	Urban residential community (not immediately adjacent to heavily traveled roads and industrial areas).	0
	Noisy urban residential community (near relatively busy roads or industrial areas).	- 5
	Very noisy urban residential community.	-10
Correction for Previous Exposure and Community Attitudes	No prior experience with the intruding noise.	+ 5
	Community has had some previous exposure to intruding noise but little effort is being made to control the noise. This correction may also be applied in a situation where the community has not been exposed to the noise previously, but the people are aware that bona fide efforts are being made to control the noise.	0
	Community has had considerable previous exposure to the intruding noise and the noise maker's relations with the community are good.	- 5
	Community aware that operation causing noise is very necessary and it will not continue indefinitely. This correction can be applied for an operation of limited duration and under emergency circumstances.	-10
Pure Tone or Impulse	No pure tone or impulsive character.	0
	Pure tone or impulsive character present.	+ 5



# Noise Compatibility of Adjacent Land Uses

COMPATIBLE

MARGINAL

INCOMPATIBLE

hospitals, nursing homes

schools, libraries, churches

\*residential

parks, cemeteries

transient lodging, playgrounds

commercial, business

\*agricultural

traffic thoroughfares

industrial, manufacturing

highway rights-of-way

airports

\* Exception: In agricultural areas where wind machines, electronic birds, etc. are in use, non-farm residential development and agriculture are not considered entirely compatible - see text for discussion.

## B. IMPLEMENTATION OF THE NOISE ELEMENT

The noise element of the Mendocino County General Plan is of use in three general areas. The first is in general planning. This covers land use planning decisions such as rezoning, revision of the general plan, and other planning studies. The second area is as an aid to the environmental impact report process. The final area where the noise element will be of particular use is in implementing the noise insulation standards set forth by the State of California in Title 25 of the Administrative Code.

The major ingredients of the noise element that enable it to be used as a planning tool are the noise exposure contours and the land use and noise compatibility guidelines. In a general planning sense the guidelines point out where the existing noise environment may conflict with a proposed land use and vice versa. The noise exposure contours for the site will be used to help establish the existing ambient noise environment. Based on the site's noise exposure and the compatibility criteria, determination of whether the land use is appropriate or not can be made. In this way it will be possible to avoid locating residential areas next to major noise sources such as highways or industry.

A more specific use of the noise element and the included land use and noise compatibility guidelines will be in the environmental impact review process. For any "project" as defined under the California Environmental Quality Act (CEQA), a determination of whether noise is an issue or not, and should be covered in a total EIR or focused EIR, can be based on the noise exposure contours and the land use compatibility criteria. The contours and the criteria will be useful for both those situations where a noise-sensitive development is to be located in a noisy area or a noise-generating development in a quiet area. It should become standard procedure to use the noise exposure contours and the noise and land use compatibility criteria during the initial study phase.

The final use of the noise element is as a vehicle to implement the noise insulation standards. The State of California has developed noise insulation standards for multi-family dwellings. These standards are contained in Title 25 of the California Administrative Code. In those cases where a multi-family development is proposed in an area where the existing Ldn is greater than 60, one of the requirements of the standards is that an acoustical report be prepared for the project. The purposes of the acoustical report are to show exactly what the existing Ldn at the site is and to discuss the manner in which the interior CNEL of 45 dB required by the standards will be met. The noise element will therefore be a major tool for implementing the noise insulation standards.

### 1. Specific Measures to Limit Noise Impact on New Construction

The County can promote site planning, building orientation and design and interior layout to lessen noise intrusion. Building setbacks, which increase the distance between source and receiver of noise, can be important. Siting buildings with

narrower dimensions facing noise source reduces intrusion of sound; sometimes buildings can be sited to shield (or be shielded by) other buildings. Sometimes interior layout can be arranged to locate bedrooms in the quietest portion of a building. In its role of reviewing project plans and informally offering professional advice on site development, the Department of Planning and the inspection agencies can suggest ways to help protect occupants of new buildings from outside noise.

State imposed noise insulation standards apply to all new residential structures except detached single family dwellings. These standards should be rigorously enforced to insure that residents are not disturbed by noise from adjoining units or exterior noise. The state standards do not apply to non-residential uses but protection is often important in commercial or industrial buildings as well. The County can promote the incorporation of noise insulation material in all new structures.

## 2. Reduction of Highway Noise

Highway design and routing can determine noise levels in many locations. Noise cannot be the only factor considered but it should be given weight along with other concerns in all new highway and county road design and routing as well as on proposed improvements of existing rights-of-way. Emphasis can also be placed on maintaining streets and county roads in good condition since poor pavement contributes unnecessary noise.

The County owns and operates many automobiles and other vehicles. As a policy, it should purchase models with the lowest noise emissions and adequately maintain all vehicles to reduce noise. State law requires that emergency vehicles sirens produce at least 90 decibels of sound at a distance of 100 feet. Discretion by the County is limited to policies of restricting use of sirens to genuine emergencies and to the type of siren used. The new warbling type has proved most annoying. Policies regarding use and type of siren may need to be revised.

According to the California Motor Vehicle Code, the County has the authority to restrict traffic and to set speed limits on County roads. At this time, no recommendations for changes are contemplated but it should be recognized that reducing speed results in reducing noise as well. In the future, some modifications to existing speed limits in certain sensitive areas may be advisable and wherever noise becomes a problem, this should be considered. The Motor Vehicle Code also contains noise emission standards which are enforceable by the County on its roads (on State Highways enforcement is by the State Highway Patrol). A method of enforcement which would emphasize education and compliance should be developed for the County.



The State Department of Transportation has a program for noise reduction on existing freeways in highly sensitive areas. Funds are limited and a system of priorities has been established. Mendocino County should identify its most serious problem area or areas and submit an application for the priority list if it has a problem which is eligible for assistance.

### 3. Airport and Railroad Noise

Some adjustment to flight patterns at Ukiah Airport may be possible to eliminate unnecessary noise but feasible changes are very limited. The most effective way of reducing noise problems connected with either rail or air transportation is to regulate land development in the noisy areas as Ukiah has recommended. Only highly tolerant uses should be permitted in the areas affected. Any new airport which may be located in Mendocino County, would, of course, have to consider existing development in picking a location and in planning its operations. If scheduled flights for major carriers are proposed at some future date, a new airport may have to be considered.

### 4. Industrial Noise

The need to tolerate a certain amount of noise from lumber mills has been discussed in the background material. In this case, the County measures may be limited to advice and technical assistance to eliminate noise where it is economically and physically feasible and to take steps to abate obvious abuses of the industry's special position and privileges in the County. One suggestion is that the loud whistle (loud enough to be heard over the operating machinery) used to signify lunch hours and coffee breaks in the mills could be eliminated by substitution of a light signal. The safety aspects of this should be investigated.

### 5. Agricultural Noise

Agricultural noises must be recognized as necessary in rural areas. Land use planning to limit the conflicts between agriculture and urbanization is most important. Some technical assistance on means to eliminate unnecessary noise should be made available either through the state farm agencies or the County offices.

## C. RECOMMENDED FUTURE ACTIONS

In addition to adopting policies and approaches suggested in the Noise Element, Mendocino County should consider the adoption of a comprehensive noise control program and ordinance. The United States Environmental Protection Agency estimates that at least a year should be spent in studying and drafting an ordinance since it is necessary that officials and citizens gain understanding of how

the ordinance is to be administered and enforced. It is also necessary for them to gain a feeling of specific noise levels as measured by the noise measuring equipment and to learn how much a program will cost.

EPA advises that it is extremely important that only one agency be given primary responsibility for enforcing and executing the Noise Control Program.

It recommends the program allow and encourage voluntary compliance with penalties and fines reserved as a last resort to achieve the goal of a quieter environment. Such a program would probably prove to be an unwise burden for the County Sheriff's Office where the prevention of crime is the primary responsibility. It might better be the responsibility of the County Health Department through its Division of Environmental Health.

The County Health Department has jurisdiction over the cities as well as the unincorporated County. When the Noise Element has been adopted by the County, each City should be encouraged to join with the County by adopting parallel elements. The cities should be involved in the recommended comprehensive noise control program and ordinance development as well.



## DEPARTMENT OF HEALTH SERVICES

51 BERKELEY WAY  
BERKELEY 94704  
(415) 540-2662



## Appendix A

March 4, 1980

**RECEIVED**  
MAR 6 1980

Richard R. Illingworth  
CHARLES M. SALTER ASSOCIATES  
350 Pacific Avenue  
San Francisco, California 94111

By PLANNING DIVISION  
Ukiah, CA 95482

Dear Rich:

I received the copy of the Mendocino County Noise Element you sent me for review. I agree that it would be very difficult to inventory the number of people exposed to noise levels in excess of  $L_{dn}$  60 because of the short source-receiver distances involved and because of the widely dispersed nature of housing in the unincorporated areas.

The only criticism I have of the noise exposure inventory is that the county may have populated areas where an extraordinarily quiet or semi-pristine noise climate is important to preserve. In these areas (for example, health resorts or meditation centers), a small change in the population or the introduction of an industry could have a substantial negative impact on the noise environment. If such areas exist, an estimate of the population and noise levels involved would be important to consider.

If you or the county have any questions regarding these comments, please feel free to call me.

Sincerely,

Russell B. DuPree  
Noise Control Engineer  
Office of Noise Control



## VII. RECREATION



# MENDOCINO COUNTY GENERAL PLAN

## RECREATION ELEMENT

ADOPTED BY

MENDOCINO COUNTY BOARD OF SUPERVISORS

DECEMBER 1, 1954

REVISED:

MAY 9, 1967

DECEMBER 22, 1976

SEPTEMBER 24, 1981

MARCH 14, 1983

NOVEMBER 26, 1984

DECEMBER 9, 1991

Mendocino County Department of Planning and Building Services  
Office: 589 Low Gap Road  
Mail: Courthouse  
Ukiah, CA 95482





## RECREATION ELEMENT

The Recreation Element of the Mendocino County General Plan was adopted in 1954, revised in 1967 in conjunction with the adoption of the Land Use and Circulation Elements, and revised again in 1967 by the adoption of the Equestrian and Hiking Trails Plan.

The Recreation Element is not a mandatory element required by state law and was not found to be deficient by the court and consequently was not revised during the 1978 - 1981 General Plan revision project except as necessary to achieve consistency with other elements of the General Plan.

The Recreation Element is contained on Pages 20 - 27 and Pages 63 - 67 of the 1967 General Plan as amended in December 1976 by the adoption of the Equestrian and Hiking Trails Plan and revised by the following changes:

### RECREATION ELEMENT REVISIONS

The following goals and policies are included in the Recreation Element.

### GOALS AND POLICIES

#### Goals

- a. Help create a wholesome environment for living in society.
- b. Provide regional parks to serve as multiple-use areas for recreational needs and to preserve part of our natural heritage.

#### Policies

- a. Allow activities near park areas that are compatible with the setting of a park.
- b. Any proposals regarding federal land development should be analyzed to determine its compatibility with county land use.
- c. Any proposals regarding state land purchase or development should be analyzed to determine their compatibility with county land use. The cost of service shall be paid by the state (i.e., rescue service, etc.).
- d. Require that the County develop a comprehensive county-wide Recreation Element for the County.
- e. Continue the "Friends of County Parks" program as a source of private donations.
- f. Encourage the use of volunteers in the construction and maintenance of County recreation facilities.
- g. Strongly encourage multiple use of state and federal lands.

The following changes are made to the 1967 Recreation Element:

1. BP&R (1967 General Plan), p. 22, Recommendation D conflicts directly with Water goal #7 and policies #7a, #7b and #7c and also Public Lands policy #h.\* Recommendation D of the 1967 plan is deleted.
2. BP&R, p. 26, Conclusion #6 conflicts with Public Lands policy #h.\*
3. BP&R, p. 65, first paragraph conflicts with Public Lands policy #h.\*
4. BP&R, p. 65, third paragraph refers to recreation areas in conjunction with Eel River water projects, which conflicts with Water goal #7 and policies #7a, #7b and #7c. The paragraph is deleted.

\*Public Lands policy #h has been revised and no longer presents a conflict.

## BEACHES, PARKS, AND RECREATION ELEMENT

Four types of parks or recreation areas are proposed in the Plan, and are classified as follows:

### a. Neighborhood Parks:

These are intended to serve residential neighborhoods at a ratio of one per elementary school, or 500 families, and site areas of from four to six acres, or one acre per 100 families. They are proposed to be turfed and landscaped, and to be developed with playground equipment and game areas for tennis, softball, etc. They should be located adjacent to elementary schools wherever conditions permit.

### b. County Parks:

These are intended to serve communities of groups of neighborhoods at a ratio of one per community of from 5,000 to 20,000 persons, and on sites ranging from 40 to 60 acres or more. They should utilize natural settings on rivers, streams, or reservoirs, or groves of trees, etc. They should provide picnic sites, swimming, boating and fishing, open play areas, etc., as conditions permit.

### c. Regional Recreational Areas:

These are intended to include State Parks and Federal water project sites in the valley and foothill areas of the County which are used by persons from a region larger than the County. They are to be developed in relation to the natural features they contain, and are in some cases administered by local agencies.

### d. Federal Recreational Areas:

These include National Forest recreational sites, Bureau of Land Management and other Federal lands used for recreation purposes. They are developed and operated by Federal agencies in accordance with plans of such agencies, and are used for the designed purposes from areas far beyond the County boundaries.

## REVISED BEACHES, PARKS, AND RECREATION ELEMENT

Mendocino County is rich in natural recreation resources. It extends from the scenic Pacific Ocean shoreline across mountains heavily timbered with redwood, conifers, and hardwoods to rich river valleys and on up the slopes of inland mountains to snow covered peaks.

These resources have been recognized in past years in development plans prepared by the County, by the State in the creation of a number of outstanding State Parks, by the National Forest Service in Forest use planning, by the Corps of Engineers in recreation developments at Lake Mendocino and by the State Department of Water Resources in future reservoir and water project planning.

This Master Plan was designed to include all of Mendocino County, and to co-ordinate the beach, park and recreational planning of all government levels.

The fine cooperation of the various government agencies, including the National Forest Service, State Division of Beaches and Parks, State Division of Forestry, State Department of Fish and Game, Wildlife Conservation Board, U.S. Corps of Engineers and other State, County and Local agencies insures a sound and orderly program for development of these rich and varied recreational resources.

### SUMMARY OF THE PLAN: RECOMMENDATIONS

#### A. NATIONAL FOREST

It is recommended that strong local support be given to recreational, and other, elements of the National Forest land use and development plans, and to full utilization of Land and Water Conservation program funds for early development of recreation facilities in National Forest areas.

Improved access by continued major improvement of the Mendocino Pass route from U.S. Highway 99-W to U.S. 101 and State Route 1 is essential to permit greater public use of the varied recreational resources in the regions through which this route passes.

#### B. BUREAU OF LAND MANAGEMENT LANDS

Current land inventory studies and revised land utilization plans of the Bureau of Land Management will offer new opportunities for recreational use of suitable portions of these public lands. New sources of development funds are available to improve and maintain such developments.



Bureau of Land Management recreational plans are integrated with the plans of other agencies to enhance the total plan for Mendocino County. The Bureau of Land Management camp sites are included in the General Plan.

#### C. CORPS OF ENGINEERS, U.S. ARMY

It is recommended that the Corps of Engineers develop recreation facilities at Lake Mendocino in accordance with the adopted Master Plan for that site.

#### ~~D. EEL RIVER WATER PROJECTS~~

~~It is recommended that Federal and State agencies involved develop to their fullest the recreation potentials of the Eel River water development projects, as shown on the Plan.~~

#### E. STATE BEACHES AND PARKS

This Master Plan includes Shoreline Development and Inland Parks, and supercedes previous County Shoreline Development Plans.

##### 1. STATE BEACH, PARKS, SHORELINE

- a. Usal Beach and Park (New Site) Priority 2:  
This area is proposed for acquisition in the long-range program. It has high potential recreational value, but at present is remote, with poor access.
- b. McKerricher Beach State Park (Addition) Priority 1:  
Completion of acquisition program in accordance with State plan is recommended.
- c. Big River Beach and Park (New Site) Priority 2-a:  
The Big River site is desirable for acquisition in the long-range program if it is not required for industrial use or destroyed by such use for park purposes.
- d. Van Damme State Park (Addition) Priority 1-a:  
This site includes six to eight acres of beach and headland north from the mouth of Little River and west of Highway Route 1. It will provide a highly scenic coast area and beach, and a location for a small boat harbor. (Private development may eliminate this proposed public site.)

- e. Manchester Beach State Park (Addition) Priority 1-b:  
It is recommended that this State Park be extended from Point Arena to the mouth of Alder Creek to include all of the intervening sand beach and dune area.
- f. Gualala River Beach Park (New) Priority 2-b:  
This site, including ocean beach and inland river frontage, is recommended for acquisition in the near future.
- g. Ten Mile River Beach Park (New) Priority 1-c:
- h. Westport-Union Landing Beach Park (Addition)
- i. Russian Gulch State Park (Addition)

## 2. STATE PARKS, INLAND

- a. Dimmick State Park (Addition):  
It is recommended that Dimmick State Park be substantially enlarged to include approximately nine miles of Navarro River frontage, and possibly ocean beach at the river mouth, in a long-range program.
- b. Standley-Branscomb State Park (Addition):  
It is recommended that the proposed dam and reservoir site, and adjacent lands, be acquired and developed.
- c. Montgomery Woods State Reserve:
- d. Mailliard Redwoods State Reserve:
- e. Indian Creek State Reserve:
- f. Standish-Hickey State Reserve:
- g. Smithe Redwoods State Reserve:
- h. Reynolds Redwoods State Park:
- i. Hendy Woods State Park:

## 3. STATE WAYSIDE REST SITES

It is recommended that wayside rest site locations be established along State Highways by the Division of Highways.

#### 4. STATE RIDING AND HIKING TRAIL

It is recommended that a riding and hiking trail system be planned in cooperation with National Forest, Bureau of Land Management, and State Park planning agencies.

#### F. STATE WILDLIFE CONSERVATION BOARD PROJECTS

##### 1. PUBLIC BEACH, FISHING ACCESS

The following sites are recommended for acquisition and improvement under the cooperative State-County program:

- a. Chadburne Gulch:
- b. Ten Mile River (beach) access: This site is recommended for the access program if it is not approved as a State Park site.
- c. Caspar Creek: (Beach south of Caspar Creek).
- d. Salmon Creek: (Beach two (2) miles south of Albion).

##### 2. INLAND HUNTING, FISHING ACCESS

- a. Cow Mountain Public Lands Area:
- b. Lake Hammerhorn:
- c. Cedar Creek fish hatchery:
- d. Darby Mountain:
- e. Russian River above Lake Mendocino:

#### G. HARBORS OF REFUGE

It is recommended that additional harbors of refuge be developed along the Mendocino Coast for the convenience of boatsmen and for safe refuge for commercial and pleasure craft in bad weather.

Locations proposed are:

- a. Noyo Harbor: Improvements to present harbor.
- b. Mendocino Bay: New facilities.
- c. Big River: South side, east of highway bridge.

d. Albion River: New facilities.

e. Arena Cove: New facilities.

#### H. COUNTY PARKS

##### 1. State Park Bond Projects: (50 + acres)

a. Faulkner Park:

b. Low Gap Park:

##### 2. Other County Parks:

a. Dehaven Creek:

b. Howard Creek:

c. Seaside Beach:

#### CONCLUSIONS

1. When Highway 101 becomes a four-lane freeway, the driving time from Ukiah to San Francisco will be greatly reduced. As a consequence, Mendocino County will become extremely accessible to major concentrations of population in the Bay Area. Recreation activities will become increasingly a predominant part of the economic base of the County. Tourism offers a viable basis for growth and utilizes but does not deplete the County's natural resources.

2. The population in Mendocino County may be expected to grow to 70,000 persons by 1985. An estimated additional 8,000 households will be present by that year and a comparable number of new dwelling units will have to be built to accommodate this increase. In addition, approximately 2,000 seasonal or vacation homes are estimated to be needed in the next twenty years. Therefore, 10,000 new housing units will be built in Mendocino County in the next two decades.

3. A population level of 70,000 will require about 5,500 new jobs. Many of these will be service-oriented. Nevertheless, there will be the basis of realistic density standards, we therefore recommend that between 400 to 500 acres be allocated for industrial expansion and that these sites be in scattered locations to permit potential industries a choice of areas. The most appropriate locations for these developments are: north of the Ukiah Airport, north of Fort Bragg, east of Willits, at Point Arena and in the Comptche-County Airport Area.



4. The influx of tourists and the increased population will require new commercial facilities in the existing shopping centers and along the highways. Therefore, the downtown areas of Ukiah and Fort Bragg should be revitalized. Also areas should be reserved for a variety of tourist-oriented free standing developments such as restaurants and motels along new freeways at selected locations.

5. New educational facilities will have to be provided to service the expanded population. It is estimated that approximately 15 new grade schools and possibly an additional high school should be built to meet this need. In addition, between 50 to 100 acres should be reserved for a new junior college.

6. The larger population and the greater number of visitors will make increased demands on the parks and recreation areas. To accommodate these pressures, the County should work for the acquisition of six sites along the Mendocino Coast. Moreover, it is recommended that the proposed 1,760 acres of additional land be acquired and incorporated into the State Park System with all possible haste.

7. New demands will also be made on the County's water system. The County should apply for a series of loans and grants under the State's Davis-Grunsky program. These funds should be used to develop a number of smaller reservoirs. Not only would these new facilities lessen the possibility of water pollution, but they would also enhance the recreational opportunities.

8. Harbors are another recreational facility which will expand. At present, there is a serious shortage of berthing and docking facilities for small craft. The deficiency is estimated to grow appreciably by 1975. The County should act in cooperation with the State and the Federal government to increase the local supply of mooring facilities.

9. The growth will not be uniform throughout the County. The Ukiah area may be expected to grow to accommodate 50 percent of the County's total population. Much of this expansion will occur in a narrow crescent around the west edge of town and on the flat lands east of the city. Fort Bragg may also be expected to grow, but at a lesser rate. Willits will expand to both the northwest and southwest. Limited growth is also envisioned for Point Arena.

10. In order to make the General Plan a reality, the zoning and subdivision ordinances should be strengthened and a capital improvement plan instituted. The environs of the new water reservoirs, the Gualala area and the scenic highway's corridors should be zoned. The County should consider a new lot split ordinance, which would prevent an erosion of the current subdivision regulations. We also suggest that a capital improvements plan and budget be instituted that will in part be derived from the General Plan.



11. The new population composition in Mendocino County will require higher levels of service. Therefore, it is recommended that the County investigate the feasibility of establishing such service areas in settled parts of Mendocino County.

## J. PARKS AND RECREATION AREAS

### 1. State Parks

Regardless of size, all present state parks are designated on the General Plan Map. These parks serve a dual purpose. They are not only recreation areas but also they preserve unique scenic or historic sites. Moreover, they are significant elements in the County's recreation resource. The existing state parks in Mendocino County are listed below:

	Size (in acres)
Adm. Wm.H. Standley State Recreation Area	45
Hendy Woods State Park	607
*Indian Creek State Reserve	15
MacKerricher State Park	283
*Mailliard Redwoods State Reserve	242
Manchester State Beach	650
*Montgomery Woods State Reserve	647
Paul M. Dimmick State Recreation Area	12
Russian Gulch State Park	1,122
*Smithe Redwoods State Reserve	460
Standish-Hickey State Recreation Area	635
Van Damme State Park	1,826
*Westport-Union Landing State Beach	31
Total Area:	6,575
Total Developed Area	5,180
*Total Reserve Area	1,395

### 2. Changes in the Park System

According to information published mid-1963, prior to passage of the 1964 state park bond issue, the following were contemplated additions and expansions to the State Park System in Mendocino County:

	Size (in acres)
Tenmile River	60
*Hendy Wood State Park	217
*Standish-Hickey State Recreation Area	1,000
Total:	1,277
*Additions	

In addition, feasibility studies are being made for the following existing or proposed state park areas:

<u>Area</u>	<u>Scope of Study</u>
MacKerricher Beach	Additional Facilities
Gualala River (Sonoma and Mendocino Counties)	Establishment of State Park or Recreation area
Tenmile Beach	Improvement of Access
Manchester Beach	Improvement of Access and acquisition of additional land for development facilities
Montgomery Woods	Improvement of Access, Acquisition of additional land, and development facilities
Admiral Standley	Development of additional facilities
Redwoods in the State-wide Park System	Final plan for acquisition and development

Any actions found to be feasible could be financed from the state share of the state park bond issue.

In 1959 the National Park Service published a survey entitled "Pacific Coast Recreation Area Survey". It identified the most desirable potential coastal recreation area sites. Forty-one separate sites in California were selected as deserving of public preservation. Six of these were along the Mendocino Coast. They were:

1. Tenmile River Beach-generally north of MacKerricher State Park.
2. Mendocino City area-consisting generally of the headlands of the Mendocino peninsula.
3. Little River-Mendocino Bay.
4. Manchester Beach-a larger area extending from Arena Code to north of the present property of Manchester Beach State Park and west of the highway.
5. Havens Neck-a small area just north of Anchor Bay-Fish Rock.

#### 6. Caspar Point, west of the highway.

In view of the increasing Federal interest in acquiring undespoiled areas and the unquestioned interest of the County in recreation and scenic preservation, it is recommended that these areas be acquired as soon as possible with the active support of the County.

#### 3. Other Parks

The existing County parks are designated on The General Plan map. The existing areas at Lake Mendocino and Mendocino Woodlands in the Jackson State Forest are also indicated on the Plan. The General Plan does not show municipal parks, national forest campgrounds, isolated hunting or fishing areas, or other small semi-public or private resorts, concessions, clubs, or facilities. Even though these park and recreation facilities are highly important in the aggregate, they are more comparable to forest areas in which recreational activities will be but one of multiple uses going on and therefore, we have not indicated them on the General Plan.

~~The General Plan Map indicates several other areas of permanent recreational interest in the future. These areas are to be developed in connection with the projected Eel River water conservation reservoirs: English Ridge, Dos Rios, and Spencer. Initial development is the responsibility of the state. County resources would only be required for more elaborate development and for operating and maintenance costs associated with these projects. Since the need for and the timing of these reservoirs are uncertain, recreational development can only be shown very generally. The acreage and facilities needed for ultimate recreation development, and the best locations for road access, campgrounds, etc., will have to be determined when the project design is more certain.~~

#### 4. Recreation Trends

The vacationers of today tend to polarize between those who travel for truly outdoor, camping experiences and those who want modern, attractive, and well-equipped accommodations, even at high prices. The former tend to use the state parks and other public campgrounds, while the latter choose high quality, good service motels, inns and resorts in advance. These choices are made from guide books and informal sources of information. Although Mendocino has its share of outdoor camping facilities, it has an abundance of facilities in the Middle Ground which are neither luxurious or simple. Most of these structures are old and they were built as tourist courts. They cannot be converted successfully to resort standards. For these reasons, many existing



developments will be phased out and a re-distribution of the concentrations of tourist accommodations will occur.

As a consequence, the County should expect changes in the recreation industry. Total tourist travel will, of course, increase. This is partly due to the larger population, in the metropolitan areas, to improved transportation facilities, and to increased advertising by private enterprises. If we suppose that about 30 private, commercial resort facilities were to be developed, a full time equivalent employment on the order of 450 jobs might be directly generated, at 5 to 25 employees per establishment. The required skills would mostly be available locally and the requisite persons might be drawn from existing employment in the County's recreation industry. In any event, reduced employment and high business mortality can be expected among the old, undercapitalized, poorly maintained tourist courts and other tourist related facilities that have failed to adapt to changing recreation demand.

#### 5. A Strategy for Parks and Recreation

The most critical public acquisition need facing Mendocino County is the acquisition of key parts of its coastline before it becomes prohibitively expensive. This is so because, on the coast, scenic damage can be done or recreational potentials impaired not only by obviously inappropriate uses such as gas stations, but even by high-quality residential development, no matter how well designed the individual structures may be. However, budgets and public support for the acquisition of additional recreation areas are meagre at best, even where the existing or projected usage of public facilities is very intensive. This is especially true of the County constituency, since capital outlay funds are very limited and there is an apparent reluctance to create bonded indebtedness. Therefore, the contemplated outlay for the acquisition of proposed new park and recreation areas is largely confined to the State Division of Beaches and Parks or Federal agencies. County capital outlays may be concentrated on development of existing or proposed areas. This is predicated on the assumption that the County will, in fact, undertake the extensive recommended planning and programming functions in the field of recreation. In the following section, suggestions are made for expanding the recreational potential of the forest areas without the necessity of outright public land acquisition.

Detailed park and recreation planning and programming will be needed to make the best use of the funds reserved for Mendocino County under the 1964 State Park Bond Act. Allocations



of these funds to the counties is not automatic but depends on the existence of an official general plan, including a recreation element. This proposed General Plan will serve as the basis for meeting the requirement, but detailed programming will be needed to specify the kind and amount of development expenditures required in existing and proposed park and recreation areas.



EQUESTRIAN AND HIKING TRAIL PLAN

An Amendment to the Mendocino County's  
General Plan Recreation Element



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Helen Magruder - Potter Valley - Mendo-Lake Chapter California  
Dressage Society

Francis Gibson - Ukiah - Sheriff's Mounted Posse

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Francis Gibson -- Vice Chairman

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## CHAPTER I

### INTRODUCTION

#### Background

The popularity of horseback riding and hiking has increased significantly in recent years. People appreciate trail activities as healthful and enjoyable forms of recreation. In addition, existing motor vehicle routes are being increasingly utilized for non-motorized modes of transportation such as horseback riding, hiking, and especially bicycle riding. The trend is especially evident in Mendocino County where the pleasant natural environment offers approximately nine months invitation to trail enthusiasts.

Federal and state governments realizing the importance of preserving and developing new equestrian and hiking trails have adopted legislation to protect existing trails and to provide new trails and related facilities. The "National Trails System Act" of 1968 plans a nationwide system of interstate equestrian and hiking trails. At the state level, the Department of Parks and Recreation is now preparing the California Recreation Trails System Plan.

#### Purpose

"The purpose of the Equestrian and Hiking Trails Plan" is to provide a policy plan for the establishment and implementation of an all-purpose non-motorized trail system throughout the unincorporated areas of the County i.e., equestrian, hiking and bicycle. Although said plan is designed for all non-motorized activities, the prime concern is for the physical improvement of equestrian and hiking trails and consideration of future bicycle facilities.

A major function of the plan is to coordinate county trails with existing or future systems planned by other governmental agencies, i.e., Bureau of Land Management's Cow Mountain, Mendocino National Forest, Corps of Engineer's Coyote Dam Facility, California Department of Parks and Recreation and Jackson State Forest.

#### Description

The Plan recognizes two distinct uses and types of non-motorized transportation corridors. The first use is the exclusive, recreation-oriental equestrian and hiking trail located away from motorized transportation corridors. The second is the "bicycle trail type" use which shares a close physical alignment with existing motor vehicle corridors. Although many of these trails would be attractive for recreation uses, many would serve as day-to-day transportation routes for those persons not using motor vehicles.

The Plan consists of a text and map, copies of which shall be on file in the County Planning Department. The "Equestrian and Hiking Trails Plan" portrays a countywide system of trails with inter-related communities with other communities as well as numerous

recreational areas. All are intended for sharing use by non-motorized riders and hikers.

A goal of the Plan is to offer a variety of pleasurable trail experiences from the ocean to the mountains and valleys. Numerous trails are based upon existing trails and serve to identify and protect these trails for future use.

#### Citizen Coordinating Committee

In the summer of 1974, the Northern California Trails Council (NCTC) was established in Laytonville, California, by individuals concerned with the closing of open space available for horseback riding and hiking and the lack of safe provisions along public roadways.

Since the establishment of NCTC, its membership grew into a county-wide ad hoc committee of concerned and interested people who have worked towards a countywide plan representing the synthesis of the thoughts and desires of the people throughout Mendocino County to help provide for the present and future equestrian and hiking trail needs of all the people of the County and its numerous visitors.



## CHAPTER II

### FINDINGS

- A. Prior to the initial presentation of the County Board of Supervisors in November of 1975, the NCTC held numerous public meetings with concerned citizens and equestrian organizations throughout the County and neighboring counties, local public officials, the California State Director of Parks & Recreation and State legislators. After a year of productive meetings, the council concluded that:
1. There was a need for immediate action to develop a county approved countywide equestrian and hiking trail plan in order that the county might be eligible for future state and federal funding.
  2. Due to limited availability of funding, the council found that it would have to confine its efforts, to a large extent, to proposing trails within publicly owned lands and along roadway shoulders and riverbeds.
  3. That the majority of trails interconnecting communities, recreational areas and natural amenities will require the usage of existing and proposed county roadways thus requiring the development of at least one shoulder of said roadways for multiple non-motorized use i.e., equestrian, hiking and bicycle. (The surface for bicycle use could be improved at some later date as long as the space is allocated at this time).
- B. A plan requires analysis of existing information, policies and programs. The following findings are a result of such analysis:

Finding 1. Recent federal demand data shows the popularity of recreational trails is growing dramatically. National statistics provided by the Federal Bureau of Outdoor Recreation indicate that by the year 2000, participation in horseback riding will increase 132%, "walking for pleasure" by 151%, and hiking by 218%. Due to Mendocino County's natural amenities, it is anticipated that these participation percentages will be higher than said national averages.

Finding 2. A sample survey of equestrian and hikers throughout the county was conducted by the Northern California Trails Council Coordinating Committee on Equestrian and Hiking Trails. The major conclusions of the survey are as follows:

- a. The typical equestrian rides several times a week, is out for two or three hours and usually confines their outing to short loop trails in the vicinity of home.
- b. Presently, most riding occurs on informal, undesignated trails which are located on privately owned land or Jackson State Forest.

- c. Mountain trails are popular with both equestrian and hikers but are used primarily by off-road vehicles (orv). Equestrian access is limited to those with horse trailers because there are no regional trails linking local and mountain areas.

Finding 3. Many jurisdictions including federal and state agencies are involved in planning for the future public equestrian and hiking trails and facilities within Mendocino County; however, very few miles of trails are in operation. The County's equestrian and hiking trails system identifies approximately 959.00 miles of public trails. Of this total 51% or approximately 487 miles of trail are either located within federal or state jurisdiction. The delineation of the regional equestrian and hiking trails was based on the trail plan adopted by the NCTC in October 1975.

Finding 4. Federal and state laws relating directly to the planning and implementation of an equestrian and hiking trails system in Mendocino County has been enacted.

- a. The 1945 California Recreation Trails Act (Section 5077, public resources code) established the first real equestrian and hiking trails planning and acquisition program in California. This act first identified the California riding equestrian and hiking trail. However, the act's specific prohibition of the use of condemnation and the resulting reliance upon the willing landowner concept has hindered the acquisition of rights-of-way for this trail.
- b. In 1971, state law (section 846 civil code, Section 5077, public resources code) established the first real equestrian and hiking trails planning and acquisition program in California. This act first identified the California riding equestrian and hiking trail. However, the act's specific prohibition of the use of condemnation and the resulting reliance upon the willing landowner concept has hindered the acquisition of rights-of-way for this trail.
- c. The State Subdivision Map Act vests in the legislative bodies of local agencies the authority to regulate and control subdivision to insure conformance to the County General Plan and to provide proper "improvements" e.g. equestrian and hiking trail easements to injunction with the division of land.

Finding 5. Potential funding available to the County to finance the acquisition, development, operation, and maintenance of equestrian and hiking trails under county jurisdiction may come from local, state, or federal sources; however, existing funding is very limited.

Local - at present, there are no County Revenues identified specifically to finance equestrian and hiking trails. Parks within the County are funded by the County General Fund. This

funding source to date has been inadequate to successfully fulfill the park goals as set forth in the adopted Recreational Element of the County General Plan. An additional burden on these funds will make existing goals more difficult to achieve.

State - Senate Bill 1110, approved by the state legislature in September of 1973, amended state law to allow the California Department of Transportation to expend state gas tax funds for "non-motorized transportation facilities", which are defined to include equestrian, pedestrian and bicycle trails. To date, these funds have not been used for equestrian and hiking trails. Funding is also available through Senate Bill 325 being the Transportation Development Act approved by the state legislature in 1971 and subsequent amendments.

Federal - The Land and Water Conservation Fund provides matching federal funds for trail acquisition and development. The Army Corps of Engineers provides matching federal funds for trails developed for local jurisdictions in conjunction with corps projects. Costs are nominal where trails are constructed on public land. In such cases the Boy Scouts, equestrian, hiking and other volunteer groups could construct many miles of trails throughout the County. Honor camp labor is another source of labor assistance to be considered.

Finding 6. Alternative method of acquiring land for public equestrian and hiking trail rights-of-way result in varying costs. Acreage required for public equestrian and hiking trail rights-of-way can be obtained through:

- a. Fee purchase
- b. Less than fee purchase which includes leases and easements.
- c. Donations and life estates
- d. Dedications
- e. Land trades

In addition to the conventional acquisition methods listed above, public trail rights-of-way can be secured through agreements with public and semi-public organizations such as utility companies.

The cost of trail acquisition varies according to the manner in which right-of-way is acquired. Donations, life estates, and dedications generally do not require direct county funding. Purchase of fee-simple does, in most cases, result in the highest cost per acre with the price level determined by normal market consideration.



Finding 7. Development of a comprehensive equestrian and hiking trail camps and staging areas, may be implemented with a variety of county resources which have varying degrees of fiscal impact.

Equestrian and hiking trails are usually unsurfaced, thereby minimizing construction requirements to grading and minor drainage and erosion control measures. Trails development may be accomplished by County personnel, by contract with private construction firms or by volunteers (Boy Scouts, equestrian and hiking organizations) and nominal cost labor parties (honor camps). Trail dedication and/or construction may also be an additional requirement of land developers when they submit proposed projects to the County. Development by County personnel or by construction contract would result direct costs to the county, the level of which will vary depending upon trail location and terrain.

Support facilities for equestrian and hiking trails range from primitive campsites to modern camping and equestrian center complexes which could include corrals, tent campsites, parking facilities for vehicles and horse trailers, restroom and potable water. Major support facility development along regional trails under County jurisdiction can be provided by the County as part of the regional park program.

Trails development may serve public purposes in addition to recreational activities, thereby reducing the overall public cost. Trails can be located to provide necessary fire breaks or access for fire fighting equipment in back county areas.

Finding 8. Trail management -- including administration, maintenance, and enforcement -- should be the responsibility of the responsible agencies with the implementation methodology dependent upon the resources available.

Administration - Federal, state and local jurisdiction are involved in the administration of portions of Mendocino County's proposed trails system. A coordination of efforts including a consolidation of some services may result in a decrease in total costs.

Maintenance - Trails designed to blend with the natural environment require very little maintenance. Trails maintenance can be performed by County forces, by contract with private or public organization, or by volunteer groups under County supervision. Volunteer programs have been very successful in other jurisdictions.

Enforcement - Trail rules are established to restrict activities which can be harmful to the trail, its environs, or to the riders and hikers. Rules should prohibit littering, the harrassment of livestock, uncontrolled use of fire, and the destruction of private property. Trail signs and instructional pamphlets

are important means of communicating trail regulations to the public. Professional law enforcement personnel can investigate violations on a complaint basis.

Finding 9. Use of off road vehicles on riding and hiking trails is incompatible with equestrian and walking activities. The phenomenal growth in the popularity of off-road vehicles has introduced problems such as noise, dust, fire risks and potentially serious damage to the terrain. Motorized vehicles that share trails with hikers and horseback riders increase the risk of injury to these users. The obtrusive impact of off-road vehicles destroys the solitude and "naturalness" of the environment which is the principle attraction for hikers and riders using remote trails. Recognition of these problems with off-use of vehicles has led the National Forest Service to prohibit use of vehicles on nature trails and designated riding and hiking trails. The provisions of separate facilities would assist in reducing the conflict between off-road vehicles and riding and hiking uses.

Finding 10. Trail safety can be achieved by conforming to standards governing the design, construction, and management of trails. These standards must provide for trails which are safe for hikers and riders of all levels of skill.

Among the most comprehensive and up-to-date standards are those of the California Department of Parks and Recreation included in the first edition of the California State Park System Trails Handbook. Included are standards for the location, design, construction, and management of trails. County riding and hiking trail standards, should be based upon the state's trail handbook.

Highway crossings present a particularly serious safety problem. Hiker and equestrian safety can be increased by providing warning signs and signals at level areas with adequate visibility.

Designated access points for emergency fire and evacuation vehicles should be included in order to decrease response time to trail emergencies.





## CHAPTER III

### GOAL, INTENT AND OBJECTIVES

#### GOAL

ESTABLISH AND PROTECT AN ENJOYABLE, EFFICIENT AND SAFE NETWORK OF PUBLIC EQUESTRIAN AND HIKING TRAILS.

#### INTENT

The Board of Supervisors recognizes that there is a growing need for recreational trails and their use by hikers and horsemen. General planning for trails will insure their timely creation in accordance with the least private injury and the greatest public good. The County General Funds, along with the State and Federal funding will enable funding of trail acquisition and maintenance. Group camps, staging areas and rest stops can be funded through existing park and recreation sources, participation grants and community contributions of labor and materials. Construction and maintenance standards, set by the County will govern those trails accepted by the County for maintenance.

#### OBJECTIVES

1. Interconnect communities, recreational areas and trails planned by the citizen coordinating committee, County and other governmental agencies.
2. Provide a variety of trail experiences by locating trails through varied terrain, scenery and points of interest.
3. Provide for acquisition, development, and management methods for trails which will utilize a maximum of user funding and community-contributed service.
4. Develop trails which may be safely used by hikers and riders of all ages and skills.
5. Blend trails into the natural environment.
6. Discourage motorized use of the trail network, other than public and private roadways.
7. Adopt trail designs which minimize trail maintenance.
8. Coordinate County agencies with public and private sectors to maximize facilities and services.
9. Incorporate group camps and staging areas into existing and future recreational areas, suitable for hiker and equestrian groups.



## CHAPTER IV

### POLICIES

Policy 1. The Equestrian and Hiking Trails Plan will be incorporated into the Recreation Element of the County General Plan. This amendment consists of a text and map, copies of which will be on file with the County Planning Department. This county-wide trail system will provide interconnecting lines among major population centers, federal, state and county recreational areas, mountains, sea and valleys.

Policy 2. The Board of Supervisors should appoint an Equestrian and Hiking Trails Advisory Committee to be responsible for:

- a) Advise the Board of Supervisors on matters of trail alignment, policy and standards for all county equestrian and hiking trails.
- b) Recommending policy direction for the administration of the Equestrian and Hiking Trails Plan and program.
- c) Recommending priority of expenditures for trails.

Policy 3. The County should include in all its future road improvements and new road construction, the consideration of the development of at least one shoulder of said roads for multiple non-motorized use.

Policy 4. In every instance possible the trails should be so designed and executed so as to enhance the natural landscape and not be detrimental to the natural assets of the land.

Policy 5. A copy of the Equestrian and Hiking Trails Plan will be forwarded to Caltrans and the County Department of Public Works, and maintained in a current status, so that, in the future, adequate provisions may be made for the crossing of roadways and development of roadside trails upon improvement of public roadways.

Policy 6. Coordination of Mendocino County Trail Plan with those plans of cities, surrounding counties and other agencies should be an ongoing process.

Policy 7. The County and the Citizens Advisory Committee will assist the U.S. Forest Service, Bureau of Land Management, Corps of Engineers, and State Division of Forestry in developing sections of the trail system within their jurisdiction.





## IMPLEMENTATION STRATEGY

The Equestrian and Hiking Trails Advisory Committee should periodically establish a trail priority list utilizing the trail plan as a guide. At the time trail funding becomes available, the Advisory Committee will meet with the appropriate agencies (e.g. County Department of Public Works, California Division of Forestry, U.S. Forest Service, Bureau of Land Management or Corps of Engineers) to discuss the feasibility of trail development and maintenance.



## CHAPTER V

### TRAIL LOCATIONS

#### A. LOCATION CRITERIA

##### General Location

Trails should be located to:

1. Offer an enjoyable and safe trail experience to users of all ages and levels of skill.
2. Take advantage of the County public road system to provide total access for multi-modal non-motorized use.
3. Give consideration to the total cost of providing and operating the trail.
4. Be accessible to riders and hikers.

#### B. GENERAL FACILITIES

##### 1. Public Lands

Develop cooperative programs between the County and other government agencies for the purpose of establishing future equestrian and hiking trails within the jurisdictional boundaries of their lands and projects.

##### 2. Shoulders of Public Roads

Those County roads designated as equestrian hiking trails in this Plan.

- a. All County roads described in this plan which may be scheduled for improvements, in the future, other than minor surface, should be considered with at least one shoulder of adequate width and material to facilitate an equestrian and hiking trail.
- b. All new County road construction should consider making provisions for at least one shoulder of adequate width and material to facilitate an equestrian and hiking trail.

##### 3. Natural Facilities

In every feasible instance it is the intent of the County to utilize available natural facilities and those lands that would be most unsuitable for more intensive development

4. Public Utility Easements

Depending on their size and location, existing and abandoned public utility easements may be suitable for facilitating equestrian and hiking trails within the jurisdictional boundaries of their lands and projects.

5. Abandoned Public Roads

Depending on their size and location, abandoned public roads may be suitable for equestrian and hiking trails.

6. Abandoned Railroad Rights-of-Way

Those railroad rights-of-way that have been abandoned with no future plans for activation or reactivation of rail service.

C. SPECIFIC LOCATIONS:

1. Trails Utilizing Federal Lands

Bureau of Land Management:

That portion of Cow Mountain Recreation area located within the County of Mendocino lying northeast of the City of Ukiah, consisting of public roadway access, trails and camping facilities.

Corps of Engineers:

Coyote Dam facility at Lake Mendocino located northeast of the City of Ukiah, consisting of trails located along shorelines of Lake Mendocino.

U.S. Forest Service:

That portion of Mendocino National Forest located within the County of Mendocino lying northeast, east and southeast of the town of Covelo, consisting of roadway, primitive trails and camping facilities.

2. Trails Utilizing State Lands

Jackson State Forest located between the cities of Willits and Fort Bragg on either side of State Highway #20 consisting of timber, fire protection, conventional trails and camping facilities.

3. Trails Utilizing County Park Lands

Mill Creek, McKee and Low Gap County Parks located east, northeast and west of the City of Ukiah respectively.

4. Trails Utilizing Public Roadways

1. ALBION LITTLE RIVER:

State Highway #1, Sec 21, T16N, R17W, northeasterly to Little River Airport Road, Sec 10, T16N, R17W.

2. BALD MOUNTAIN ROAD:

Mina Road, Sec 41, T24N, R13W, northeasterly to the Humboldt County line.

3. BELL SPRINGS ROAD:

State Highway #101, Sec 19, T23N, R15W, northerly to the Humboldt County line.

4. BRANSCOMB ROAD:

State Highway #1, north of the town of Westport, Sec 20, T21N, R17W, northeasterly to State Highway #101 in the town of Laytonville, Sec 12, T21N, R15W.

5. BRICELAND ROAD:

Community of Bear Harbor, Sec 26- T24N, R19W, northerly to the Humboldt County line.

6. CANYON ROAD:

Willits-Hearst Road, Sec 19, T18N, R13W, northeasterly to Tomkl Road, Sec 12, T18N, R13W.

7. CASPAR LITTLE LAKE ROAD:

State Highway #1, Sec 1, T17N, R16W, southeasterly to its intersection of Lake Road and Little Lake Road, Sec 22, T17N, R17W.

8. CASPAR ORCHARD ROAD:

State Highway #1, southeasterly into Jackson State Forest, Sec 3, T17N, R17W.

9. COMPANY RANCH ROAD:

Fort Bragg-Sherwood Road, Sec 2, T18N, R17W, southwesterly to the north boundary line of Jackson State Forest, Sec 18, R18N, R16W.



10. COMPTICHE-UKIAH ROAD:

Intersection of Orr Springs Road and Low Gap Road, westline of Sec 19, T16N, R14W, northwesterly to State Highway #1, Sec 32, T17N, R17W.

11. COW MOUNTAIN ACCESS ROAD:

Mill Creek Road, Sec 25, T15N, R12W, northeasterly to Cow Mountain.

12. DOBIE (ADOBE) LANE:

Fairbanks Road, common corners of Sections 16, 17, 20 and 21, T22N, R12W, north to East Lane, common line between Sections 4 and 5, T22N, R12W.

13. EAST LANE:

Dobie (Adobe) Lane, common line between Sections 4 and 5, T22N, R12W, east to Short Creek Road, Section 4, T22N, R12W.

14. EAST ROAD:

Intersection of Tomki Road and West Road, Sec 20, T17N, R12W, southerly to State Highway #20 overpass north of the community of Calpella.

15. EAST SIDE POTTER VALLEY ROAD:

Gibson Ave., common line between Sections 8 and 17, T17N, R11W, southerly to Cross-Centerville Road, common line between Sections 17 and 20, T17N, R11W.

16. EAST SIDE ROAD:

Mill Creek Road being 1/4 mile south of State Highway #222 (Talmage Road) in Yokayo Rancho, southeasterly to State Highway #175 in the community of "Old Hopland".

17. EEL RIVER ROAD:

Van Arsdale Road, Sec 30, T18N, R11W, southerly to Gibson Ave., common line between Sections 8 and 17- T17N, R11W.

18. FAIRBANKS ROAD:

At its intersection with Covelo Road and Poonkinney Road, T22N, on the range line between R13W, and R12W, at the common corner of Sections 13, 18, 19 and 24 east to Dobie (Adobe) Lane common corner of Sections 16, 17, 20 and 21, T22N, R12W.

19. FISH ROCK ROAD:

State Highway #1, Sec 19, T11N, R13W, northeasterly to State Highway #128, Sec 3, T12N, R13W.

20. FLYNN CREEK ROAD:

Comptche-Ukiah Road in the community of Comptche, Sec 12, T16N, R16W, southerly to State Highway #123, Sec 13, T15N, R16W.

21. FORT BRAGG-SHERWOOD ROAD:

Sherwood Road, Sec 6, T19N, R14W, southwesterly to Dana Street (City limits of the City of Fort Bragg) west line of Sec 8, T18N, R17W.

22. FOST (FOSTER) MOUNTAIN ROAD:

Hearst-Willits Road, Sec 32, T19N, R12W, southeasterly to Ridgeway, south line Sec 1, T18N, R12W.

23. GIBSON LANE:

Eel River Road, south line of Sec 8, T17N, R11W, easterly to Power House Road, Sec 18, T18N, R11W.

24. HEARST-WILLITS ROAD:

Baechtell Creek bridge (east city limits of Willits) Sec 18, T18N, R13W, northeasterly to Bald Mountain, Sec 21, T20N, R12W.

25. HILL ROAD:

Dobie (Adobe) Lane, common corner of Sections 16, 17, 20 and 21, T22N, R12W, southeasterly to mid-section of Sec 22, T22N, R12W.

26. HULL VALLEY ROAD:

Mina Road, Sec 2, T23N, R13W, northeasterly to the Mendocino National Forest

27. LAKE MENDOCINO DRIVE:

Russian River bridge northeasterly to Lake Mendocino.

28. LAKE RIDGE ROAD:

Marina Drive, in Yokayo Rancho, south to its terminus.

29. LAKE ROAD:

State Highway #20, Sec 31, T18N, R16W, southwesterly to the intersection of Caspar Little Lake Road and Little Lake Road, Sec 22, T17N, R17W.

30. LAYTONVILLE-DOS RIOS ROAD:

State Highway #101 in the town of Laytonville, Sec 12, T21N, R15W, easterly to the intersection of Covelo Road (State Highway #162) and Poonkinney Road, being easterly of the Dos Rios Bridge, Sec 6, T21N, R13W.

31. LITTLE LAKE ROAD:

State Highway #1, Sec 30, T17N, R17W, northeasterly to the intersection of Lake Road and Caspar Little Lake Road, Sec 22, T17N, R17W.

32. LITTLE RIVER AIRPORT ROAD:

State Highway #1, Sec 5, T16N, R17W, northeasterly to Comptche-Ukiah Road, Sec 1, T16N, R17W.

33. LOW GAP ROAD:

Low Gap County Park one (1) mile west of its intersection with North State Street, northwesterly to the intersection of Comptche-Ukiah Road and Orr Springs Road, west line of Sec 19, T16N, R14W.

34. MARINA DRIVE:

East Side Calpella Road (Yokayo Rancho) in the community of Calpella, easterly to Lake Mendocino.

35. MENDOCINO PASS ROAD (STATE HIGHWAY #162):

At its intersection with Short Creek Road, Sec 28, T23N, R12W, easterly to the Glenn County Line.

36. MILL CREEK ROAD:

East Side Road, the intersection being 1/4 mile south of State Highway #222 (in the Yokayo Rancho) south-easterly to Lake County Line, Sec 5, T14N, R11W.

37. MINA ROAD:

State Highway #162 in the town of Covelo, T23N, on the range line between R13W, and R12W, at the common corner of Sections 25, 30, 31 and 36, northwesterly to the Humboldt County Line, Sec 35, T5S, R7E.

38. NAVARRO RIDGE ROAD:

State Highway #1, Sec 33, T16N, R17W, southeasterly to State Highway #128, Sec 13, T15N, R16W

39. POONKINNEY ROAD:

Covelo Road (State Highway #162) T22N, common range line of R12W and R13W at the common corner of Sections 13, 18, 19 and 24 southeast to Covelo Road (State Highway #162) near the community of Dos Rios, Sec 6, T21N, R13W.

40. POWER HOUSE ROAD:

Gibson Ave., common line between Sections 8 and 17, T17N, R11W, southerly to Cross-Centerville Road, common corner of Sections 17, 18, 19 and 20, T17N, R11W.

41. RIDGEWAY HIGHWAY:

Fost Mountain Road, south line of Sec 1, T18N, R12W, southeasterly to Van Arsdale Road, Sec 19, T18N, R11W.

42. SCHOOL WAY:

Intersection of West Road, Sec 5, T16N, R12W, southwest-erly to State Highway #101.

43. SHERWOOD ROAD:

State Highway #101 in the City of Willits, Sec 13, T18N, common range line between R13W, and R14W, north-westerly to State Highway #101 near Wilson Gulch, Sec 18, T20N, R14W.

44. SHORT CREEK ROAD:

East Road, Sec 4, T22N, R12W, north to Mendocino Road (State Highway #162) Sec 28, T23N, R12W.

45. SPYROCK ROAD:

State Highway #101, Sec 33, T23N, R15W, northeasterly to its terminus at the Eel River in the community of Spyrock, Sec 5, T23N, R14W.

46. TOMKI ROAD:

Hearst-Willits Road, Sec 36, T19N, R13W, southerly to the intersection of East Road and West Road, Sec 20, T17N, R12W.

47. USAL ROAD:

De Bilbiss Ranch, Sec 11, T22N, R18W, northerly to the Humboldt County Line.

48. VAN ARSDALE ROAD:

Ridgeway Highway, Sec 19, T18N, R11W, southerly to Eel River Road, Sec 30, T18N, R11W.

49. VICHY SPRINGS ROAD:

Russian River Bridge north and east to its terminus, south line of Sec 2, T15N, R12W.

50. WEST ROAD:

Intersection of East Road and Tomki Road, Sec 20, T17N, R12W, south to School Way, Sec 5, T16N, R12W.

51. WEST SIDE POTTER VALLEY ROAD:

Cross-Centerville Road, Common corner of Sections 17, 18, 19 and 20, T17N, R11W, southerly to East Side Potter Valley Road, Sec 5, T16N, R11W.



# CHAPTER VI

## MILEAGE OF EQUESTRIAN & HIKING TRAILS

A.	TOTAL ESTIMATED MILEAGE OF EQUESTRIAN AND HIKING TRAILS	<u>Mileage</u> 959.00
B.	TOTAL ESTIMATED MILEAGE OF TRAILS UTILIZING FEDERAL LANDS	246.00
C.	TOTAL ESTIMATED MILEAGE OF TRAILS UTILIZING STATE LANDS	241.00
D.	TOTAL ESTIMATED MILEAGE OF TRAILS UTILIZING COUNTY PARKS	13.00
E.	TOTAL ESTIMATED MILEAGE OF TRAILS UTILIZING PUBLIC ROADWAYS	459.00
1.	ALBION LITTLE RIVER	3.19
2.	BALD MOUNTAIN ROAD	6.96
3.	BELL SPRINGS ROAD	17.87
4.	BRANSCOMB ROAD	26.12
5.	BRICELAND ROAD	9.98
6.	CANYON ROAD	4.48
7.	CASPAR LITTLE LAKE ROAD	4.83
8.	CASPAR ORCHARD ROAD	4.35
9.	COMPANY RANCH ROAD	1.43
10.	COMPTCHE-UKIAH ROAD	23.61
11.	COW MOUNTAIN ACCESS ROAD	3.03
12.	DOBIE (ADOBE) LANE	2.92
13.	EAST LANE	0.52
14.	EAST ROAD	5.39
15.	EAST SIDE POTTER VALLEY ROAD	1.18
16.	EAST SIDE ROAD	13.20
17.	EEL RIVER ROAD	4.03
18.	FAIRBANKS ROAD	2.01
19.	FLSH ROCK ROAD	28.87
20.	FLYNN CREEK ROAD	8.97
21.	FORT BRAGG-SHERWOOD ROAD	30.99
22.	FOST (FOSTER) MOUNTAIN ROAD	4.04
23.	GIBSON LANE	0.85
24.	HEARST-WILLITS ROAD	24.44
25.	HULL ROAD	4.12
26.	HULL VALLEY ROAD	4.61
27.	LAKE MENDOCINO DRIVE	0.45
28.	LAKE ROAD	6.42
29.	LAKE RIDGE ROAD	0.29
30.	LAYTONVILLE-DOS RIOS ROAD	12.25

31.	LITTLE LAKE ROAD	5.23
32.	LITTLE RIVER AIRPORT ROAD	5.92
33.	LOW GAP ROAD	21.29
34.	MARINA DRIVE	2.01
35.	MENDOCINO PASS ROAD (STATE HWY #162)	22.93
36.	MILL CREEK ROAD	5.54
37.	MINA ROAD	20.51
38.	NAVARRO RIDGE ROAD	13.66
39.	POONKINNEY ROAD	11.75
40.	POWER HOUSE ROAD	3.85
41.	RIDGEWAY HIGHWAY	1.51
42.	SCHOOL WAY	1.85
43.	SHERWOOD ROAD	17.18
44.	SHORT CREEK ROAD	1.67
45.	SPYROCK ROAD	12.32
46.	TOMKI ROAD	11.74
47.	USAL ROAD	27.95
48.	VAN ARSDALE ROAD	2.12
49.	VICHY SPRINGS ROAD	3.95
50.	WEST ROAD	3.32
51.	WEST SIDE POTTER VALLEY ROAD	1.26
	TOTAL	<u>458.96</u>

## APPENDIX

June 30, 1976

TO: Mr. C. F. Campbell  
Director of Public Works

FROM: Richard J. Henderson  
Deputy District Attorney

SUBJECT: Recreational trails on County-maintained highways,  
Opinion 76-43.

Some time ago, you asked our office to prepare an opinion on the legal issues surrounding the County's establishment of a series of recreational trails upon County roads. In response to your request, the following analysis has been prepared, using as an outline the five questions you raised in your memorandum of December 2, 1975.

### ANALYSIS

First, there is no statutory prohibition regarding the use of county highways by horseback riders. Section 951 of the Streets and Highways Code provides the board of supervisors of each county with the authority to set aside paths for horse trails:

"(a) Such board may set apart on any county highway a strip of land for a side path, and make an order designating the width of such path, and cause the lines separating the path from the highway to be located and marked by stakes, posts, curbs, dikes, trees, or other physical delineations, placed at such distances apart as the board considers proper.

"(b) After a path is set apart, and the lines separating it from the highway are located and marked, as provided in subdivision (a) of this section, the use of such path is restricted to pedestrians, riders of horses, and riders of vehicles propelled solely by the power of the rider.

"(c) The board may charge the expense of erecting and maintaining such path to the county general fund, the road fund, or the district fund of any district benefited."

California Streets and Highways Code, Section 951.

Director of Public Works  
June 30, 1976

Thus, the County has the discretionary authority to develop horse trails utilizing the existing roadways, provided it follows the above procedure.

Second, the possibility of increased exposure on behalf of the County for liability for the riders' safety is more difficult to analyze. With respect to off-road trails, Section 831.4 of the Government Code relieves the County of liability for injuries occurring thereon and reads as follows:

"A public entity, public employee, or a grantor of a public easement to a public entity for any of the following purposes, is not liable for an injury caused by a condition of:

"(a) Any unpaved road which provides access to fishing, hunting, camping, hiking, riding, including animal and all types of vehicular riding, water sports, recreational or scenic areas and which is not a (1) city street or highway or (2) county, state or federal highway or (3) public street or highway of a joint highway district, boulevard district, bridge and highway district or similar district formed for the improvement or building of public streets or highways.

"(b) Any trail used for the above purposes."

California Government Code, Section 831.4.

With respect to trails on County roads, the basic principles of government liability for injuries resulting from dangerous conditions come into play. Section 835 of the Government Code lays out those principles as follows:

"Except as provided by statute, a public entity is liable for injury caused by a dangerous condition of its property if the plaintiff establishes that the property was in a dangerous condition at the time of the injury, that the injury was proximately caused by the dangerous condition, that the dangerous condition created a reasonably foreseeable risk of the kind of injury which was incurred, and that either:

"(a) A negligent or wrongful act or omission of an employee of the public entity within the scope of his employments created the dangerous condition; or

"(b) The public entity had actual or constructive notice of the dangerous condition under Section 835.2 a sufficient time prior to the injury to have taken measures to protect against the dangerous condition."



Director of Public Works  
June 30, 1976

California Government Code, Section 835.

It would seem that permitting horses on public roads might reasonably be construed as creating a dangerous condition under the above authority. However, the County may escape liability for the creation of such a dangerous condition under Section 830.6 of the Government Code, which provides design immunity for such conditions and reads as follows:

"Neither a public entity nor a public employee is liable under this chapter for an injury caused by the plan or design of a construction of, or an improvement to, public property where such plan or design has been approved in advance of the construction or improvement by the legislative body of the public entity or by some other body or employee exercising discretionary authority to give such approval or where such plan or design is prepared in conformity with standards previously so approved, if the trial or appellate court determines that there is any substantial evidence upon the basis of which (a) a reasonable public employee could have adopted the plan or design or the standards therefore or (b) a reasonable legislative body or other body or employee could have approved the plan or design or the standards therefor.

California Government Code, Section 830.6.

The broad immunity granted by this section has been significantly limited by the California Supreme Court. In Baldwin v. State of Calif. (1972), 6 C3d 424, plaintiff sought damages from the state on the theory that injuries he incurred in an automobile accident at the intersection of a state highway and city street were caused by a dangerous condition of state property which resulted from the absence of a left-turn lane on the highway. The trial court granted the state's motion for summary judgment, in reliance on the above section. The Supreme Court reversed, holding that the immunity so provided was not perpetual but could be lost as the result of changed conditions. As the court wrote:

"\* \* \* we hold that where a plan or design of a construction of, or improvement to, public property, although shown to have been reasonably approved in advance or prepared in conformity with standards previously so approved, as being safe, nevertheless in its actual operation under changed physical conditions produces a dangerous condition of public property and causes injury, the public entity does not retain the statutory immunity from liability conferred on it by section 830.6."

Baldwin, supra, at page 438.



Director of Public Works  
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In Cameron v. State of California (1972), 7 C3d 318, plaintiffs were motorists who had been injured when their car went out of control while making an "S" curve. They sued the state on the ground that it had failed in its duty in keeping the highway in a safe condition and on the additional ground that the state had failed to warn of the dangerous condition of the curve. The trial court granted the state's motion for nonsuit. The Supreme Court reversed and ruled as follows:

" \* \* \* we conclude that where the state is immune from liability for injuries caused by a dangerous condition of its property because the dangerous condition was created as a result of a plan or design which conferred immunity under section 830.6, the state may nevertheless be liable for failure to warn of this dangerous condition where the failure to warn is negligent and is an independent, separate, concurring cause of the accident."

Cameron, supra, at page 329.

In light of the above, it seems clear that the County does not lose its design immunity in creating recreational trails where it follows the procedure given in Section 830.6. The Supreme Court's above limitations have no effect upon the County so long as the following conditions are met:

1. The Board of Supervisors approves the plan or design in advance of the construction.
2. The County regularly reviews the actual operation of the plan for significant changes in physical conditions which might produce dangerous conditions.
3. The County erects appropriate warning signs along the trails and otherwise adheres to the above mentioned Section 951 of the Streets and Highways Code.

Third, on the basis of the above analysis, the County does not expose itself to any increased liability or responsibility for vehicles becoming involved in vehicle-horse accidents on these trails.

Fourth, Section 16904 of the Food and Agricultural Code has eliminated the presumption that a vehicle-animal collision is due to the negligent conduct of the person in control of the animal. Thus, neither the horse-back rider nor the vehicle driver enjoys any right of way over the other.

Fifth, as above mentioned, the County faces an increase in liability for placing signs along County Roads giving notice of horse trails. Section 830.8 of the Government Code sets forth the circumstances in which counties are liable for failure to provide warning signals and reads as follows:

Director of Public Works  
June 30, 1976

"Neither a public entity nor a public employee is liable under this chapter for an injury caused by the failure to provide traffic or warning signals, signs, markings or devices described in the Vehicle Code. Nothing in this section exonerates a public entity or public employee from liability for injury proximately caused by such failure if a signal, sign, marking or device (other than one described in Section 830.4) was necessary to warn of a dangerous condition which endangered the safe movement of traffic and which would not be reasonably apparent to, and would not have been anticipated by, a person exercising due care."

California Government Code, Section 830.8.

In light of this section and Cameron, supra, the County dramatically reduces its liability where it constructs adequate warning signs in areas of dangerous conditions.

In conclusion, the County may create a system of horse trails on its roads without fear of increasing its liability provided it follows the above delineated guidelines in designing and building said trails.

Very truly yours,

/s/

RICHARD J. HENDERSON  
Deputy District Attorney

(Opinion prepared by  
Michael Cartmell, Law Clerk)



## VIII. OPEN SPACE & CONSERVATION





# MENDOCINO COUNTY GENERAL PLAN

## OPEN SPACE AND CONSERVATION ELEMENT

ADOPTED BY  
MENDOCINO COUNTY BOARD OF SUPERVISORS

JANUARY 29, 1974

REVISED:

SEPTEMBER 24, 1981

Mendocino County Planning Department  
Office: 589 Low Gap Road  
Mail: Courthouse  
Ukiah, CA 95482



## OPEN SPACE AND CONSERVATION ELEMENT

The Open Space and Conservation Elements of the Mendocino County General Plan were adopted in 1974. Neither the Open Space nor the Conservation Element was found to be deficient by the court and consequently neither element was revised during the 1978 - 1981 General Plan revision project, except as necessary to achieve consistency with other elements of the General Plan.

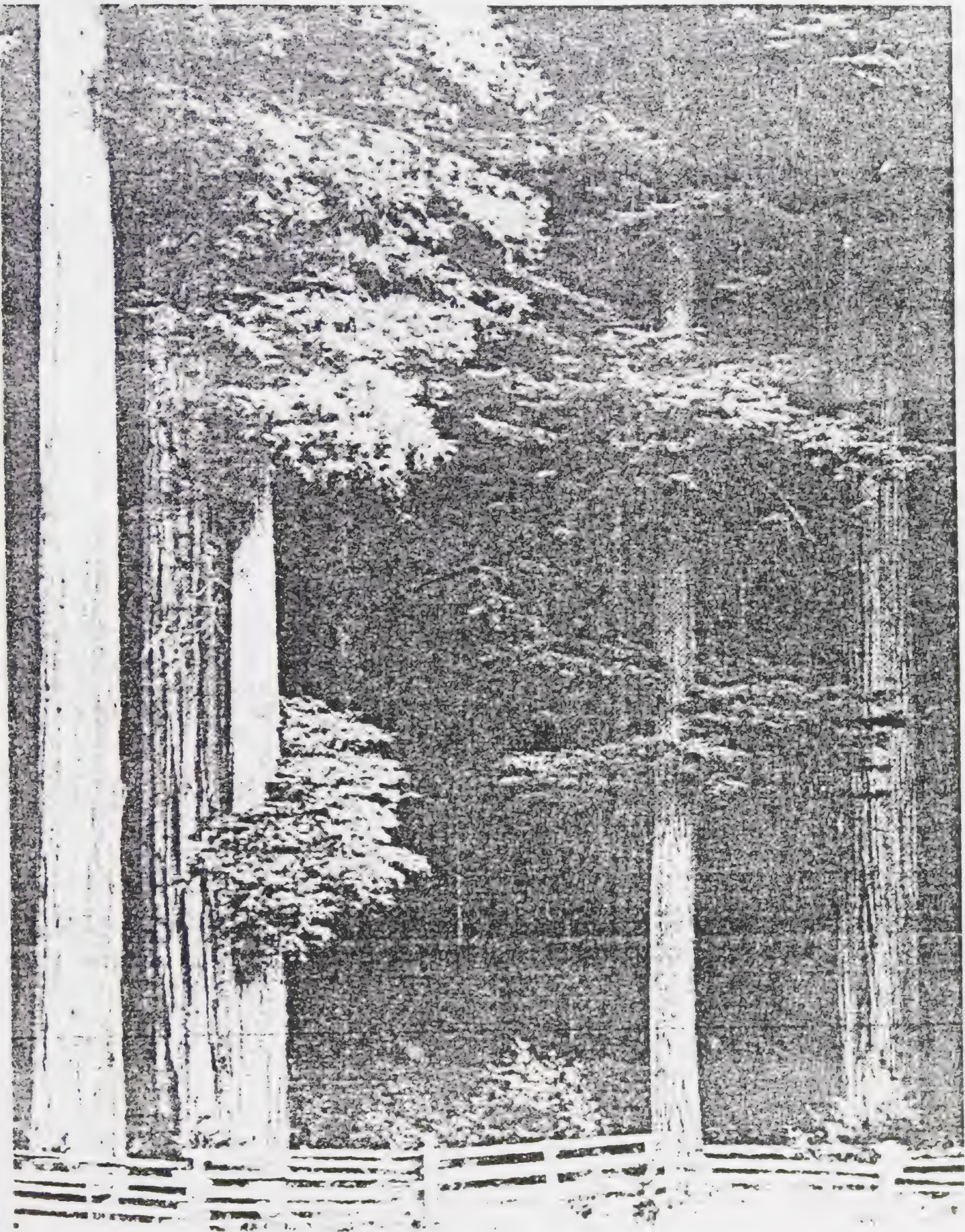
The Open Space and Conservation Elements are contained in a separate document of 100 pages and six map plates and is revised as follows:

### Open Space and Conservation Element Revisions

1. OS&C, p. 8, Conservation Implementation, second sentence is revised to read, "Lands with potential for timber production shall remain in parcels of at least 160 acres.
2. OS&C, p. 8, Agricultural Land, third paragraph is revised to avoid having two different definitions of prime soils. The first sentence of the paragraph is revised to read, "Class I, II and III soils constitute 75,541 acres, or 3.13 percent of the County's total land area."
3. OS&C, p. 9, second sentence is amended to read in part: "...shall not permit reduction in parcel size below 40 acres.
4. OS&C, p. 9, C Range Lands, the following is added to last sentence of the first paragraph: "...and which qualifies for inclusion in an Agricultural Preserve Type II."
5. OS&C, p. 24, the references in the second and fourth paragraphs to a 20 acre minimum parcel size for agricultural lands are changed to 40 acres.
6. OS&C, p. 24, the reference to a 20 acre minimum parcel size in the fifth paragraph should be changed to 160 acres.
7. OS&C, p. 28, objective II. 10. is amended to read, "Conserve open space along identified scenic corridors and discourage strip development."







## **OPEN SPACE - CONSERVATION ELEMENT**

**Mendocino County, California**





OPEN SPACE-CONSERVATION ELEMENT OF THE  
MENDOCINO COUNTY GENERAL PLAN

Preparation of this Plan was financed in part through a Comprehensive Planning Grant from the Department of Housing and Urban Development under the provisions of Section 701 of the Housing Act of 1968, as amended.



## ACKNOWLEDGMENTS

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### Contributing Organizations

American Society of Foresters  
California Natural Areas Coordinating Council  
California Roadside Council  
Mendocino County Conservation and Planning Foundation, Inc.  
Mendocino County Historical Society  
Pacific Gas and Electric Company  
Pacific Telephone and Telegraph Company





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PART I  
OPEN SPACE-CONSERVATION ELEMENT  
OF THE  
MENDOCINO COUNTY GENERAL PLAN



## RECOMMENDATIONS

1. Adopt this Open Space-Conservation Plan as an Element of the Mendocino County General Plan, thereby fulfilling requirements of State law.
2. Adopt an open space zoning ordinance which implements this Plan.
3. Forward copies of this document to the State Resources Agency, the North Coast Region of the California Coastal Zone Conservation Commission, and other governmental agencies as deemed proper and necessary.
4. Direct all concerned County departments and agencies to acknowledge this General Plan Element in their planning operations.
5. Instruct the Planning Department to review and report annually on the progress of implementation of this General Plan Element.
6. Instruct the County Administration Office to investigate and report on the feasibility of the Implementation Action Program as recommended herein.
7. Instruct the Planning Department and the County Administrator to implement the adopted Action Program.
8. Instruct the County Administration Office to coordinate the various concerned County departments in establishing priorities for open space acquisition.
9. Commend the Open Space-Conservation Citizens' Advisory Committee for the work and time they have expended in the development of this Plan.





## INTRODUCTION

The Open Space-Conservation Element of the County's General Plan is a form of long-range planning with the major goals of:

Quality in the natural resource base.

Quality in the environment to provide attractive, safe, and satisfying places to live, work, and play.

Quality in the standard of living.

Without detailed open space planning, the wealth of resources in Mendocino County may be developed contrary to the needs and desires of the citizens with regard to variety, location, and quality of open space. With proper planning, future development activities in the County can be channeled into the beneficial forms for all.

Mendocino County's abundant resources are the source of food, fiber, minerals, and recreation for a large population. These same resources constitute the economic base in the County both for personal income and taxes. Long-range planning can ensure that the demand for intensive residential, commercial, and industrial uses will be met without compromising the goals set forth above.

In the development of this plan, the following considerations have been given utmost attention:

- Protection of all property rights and compensation by governmental agencies when fee title or portion thereof is acquired.
- Encouragement of participation by citizens and interested groups at all stages in the development of this Plan.
- The need for enforcement of existing County laws, especially related to land division.
- Recognition of the County's coastal areas as having special resources, interests, and problems.
- Promotion of multiple-use of open space areas consistent with the characteristics of each area.
- Retention of the maximum amount of open space land in private ownership.

- Legislative action should take place so that zoning which has been established through a study with citizen participation may preempt General Plan policies in that area.

## BACKGROUND

Open space and conservation were recognized as major components of planning in the development of the County's General Plan adopted in 1967.

In recent years, State-wide public awareness of the expendability of resources has grown. As a result of this awareness and public pressure, the State has enacted legislation which makes it mandatory for local governments to adopt Open Space and Conservation Elements of their General Plan by December 31, 1973. In order to meet the State requirements, the Mendocino County Board of Supervisors joined with the County of Humboldt in pursuing a Federal grant to complete the study. On November 28, 1972, the consulting firm of Lampman and Associates was retained by the two Counties to complete the Open Space-Conservation Element.

The Board of Supervisors determined the need and desirability of involving citizens in the planning process from the beginning. An Open Space Citizens' Advisory Committee was established and members, representing a wide variety of community interests and locations, were appointed. The Citizens' Committee's major duties were to identify goals and objectives of the planning study and to review the work of the consultant.

This document can be identified as an initial Open Space-Conservation Plan for the County. In the next two years, the following planning tools will be developed: a plan for the coastal area developed by the Coastal Zone Conservation Commission, General Plans for the incorporated cities and several unincorporated communities, sphere of influence plans developed by the Local Agency Formation Commission, several new elements of the County's General Plan, and changes in zoning and the General Plan to bring about consistency between these two entities. These new forms of information and policy will make valuable contributions to future open space planning and should be incorporated into this element of the General Plan.





## PLAN OVERVIEW

State legislation has provided definitions of open space and conservation which have guided the development of this element:

"Open space land is any parcel or area of land or water which is essentially unimproved and devoted to an open space use as defined in this section and which is designated on a local, regional or State open space plan as any of the following:

1. Open space for the preservation of natural resources...,
2. Open space used for the managed production of resources...,
3. Open space used for outdoor recreation...,
4. Open space for public health and safety....

A conservation element should include...the conservation, development, and utilization of natural resources including water and its hydraulic force, forests, soils, rivers and other waters, harbors, fisheries, wildlife, minerals, and other natural resources...."

In the following Plan, all of these considerations have been arranged in three major categories:

1. Natural and managed resources.
2. Recreation and cultural needs.
3. Health and safety.

For each of these categories, an inventory of appropriate lands has been made, maps have been drawn, the pertinent questions and problems discussed, objectives formulated, and implementation proposed. The environment inventory is a separate document which is incorporated into this Plan. Large scale maps are available in the Planning Department, and small scale reproductions have been included here summarizing the lengthy analysis conducted by the technical staff and Citizens' Committee. Goals, objectives, and specific implementation procedures are listed at appropriate places in the body of the Plan as follows and also separately at the end.

Compilation of all these components constitutes the Open Space-Conservation Element of the County's General Plan.



## THE PLAN

### I. CONSERVE OUR NATURAL RESOURCES

Resources, whether subject to management by man or not, are sensitive and valuable assets to the County. All resources are intimately connected with and dependent upon each other, just as man is dependent upon them. Forest, crop, and grazing land is subject to intensive management and control by man. All forms of water, wildlife, fish, minerals, and vegetation are subject to man's influence.

It is necessary that man's relationship with these resources is such that they continue to provide him with food, fiber, and minerals. The harvesting and processing of these necessities provide a major portion of the employment, income, and tax revenue in the County.

The natural resources not subject to intensive management are equally important to the County for their attraction to a large recreational industry, aesthetic enjoyment, and contribution to the proper total functioning of the land.

In the past, short-sighted, uninformed, or selfish practices have adversely affected our resource base. Should resources become depleted, the concomitant increase in their value may trigger further mismanagement. It is therefore appropriate that long-term plans be made for the conservation of our natural resources.

#### A. CONSERVATION

Mendocino timber harvests rank second in the State. The lumber industry provides approximately one-third of the County labor force. The County lumber industry's contribution to the State-wide harvest has remained quite constant over the past 10 years. Increased utilization standards and improved mill technology have allowed the lumber and wood products industry to remain a major segment of the County's economy.

Prime forest land, defined as that which qualifies for inclusion under the Williamson Act, constitutes 47 percent of the County. Approximately three-quarters of Mendocino's commercial forest land is classified as "young growth," i.e., less than 100 years of age. Private landowners account for 84 percent of the total commercial forest area. Redwood predominates as the major conifer tree species with Douglas fir second in importance. Ponderosa pine also exists as an important commercial forest tree, principally lying in the eastern half of the County.

Much forest land in the County is not presently being managed for timber. If such land were developed in ways consistent with its potential capabilities, it would remain available for future production and consequent contribution to the economy of the County.

**OBJECTIVES:** Identify and conserve lands suitable for prime agricultural production, including timber. Encourage sustained yield management of forest land.

**IMPLEMENTATION:** Encourage use of the Williamson Act and the zoning ordinance. Lands with potential for timber production shall remain in parcels of at least 160 acres. Ownership, timber site class, and general capability for production should be taken into consideration when permitting reduction in parcel size. Acquire open space or scenic easements in critical areas.

## B. AGRICULTURAL LANDS

A major problem facing any urbanizing area today is the preservation of prime agricultural soils. The most valuable land for agricultural use - portions of the coastal shelf and inland valleys - are the same areas most susceptible and desirable for intensive residential development.

Since soils are the result of a long natural process combining aspects of climate, vegetation, and mineral composition, it is a logical assumption that the prime soils are a non-renewable resource.

Class I, II, and III soils constitute 74,541 acres, or 3.13 percent of the County's total land area. In addition, Class IV soils have been identified as important agricultural lands since they support a great deal of the grape acreage.

As with forest land, some prime agricultural soils are not being farmed at present. Development of this land consistent with its potential capability could reserve it for future production.

Even though 10 acres of excellent agricultural land may be an economic unit, larger acreages are more profitable and will encourage the landowner to keep it in agricultural productivity.

**OBJECTIVES:** Identify and conserve lands suitable for prime agricultural production, including all crops. Create buffer zones around intensive agriculture.

**IMPLEMENTATION:** Encourage use of the Williamson Act and the

zoning ordinance. Lands with potential for agricultural production should remain in acreages capable of such production. An intensive agricultural zone (for example, A-2) should be modified for our most productive crop land and shall not permit reduction in parcel size below 40 acres. Acquire open space or scenic easements in critical areas.

#### C. RANGE LANDS

Recent pressures from residential development are reducing the acres of prime rangelands and therefore affecting the livestock industry of the County. Some soils suitable for grazing have severe limitations for buildings. The Yorkville soil for example is very unstable but is one of the best rangelands in the County. Prime rangeland may be defined as land which has the capability of carrying one animal unit per year on forty acres or less, and which qualifies for inclusion in an Agricultural Preserve Type II.

OBJECTIVES: Identify and conserve lands suitable for prime agricultural production, including rangeland. Encourage controlled burning for improvement of brush ranges for livestock production.

IMPLEMENTATION: Encourage the use of the Williamson Act and the zoning ordinance. Lands suitable for rangeland should remain in acreages capable of such production. Acquire open space or scenic easements in critical areas.

#### D. WATER

Water is essential to life, yet is often abused - unknowingly or otherwise. In addition to its importance to the sustenance of human life, water is important to man for his recreation, is essential to plant and animal life, and provides a habitat for a great number and variety of animals.

Both surface waters and groundwater basins are used extensively for water supply in the County. Groundwater occurs in saturated zones below the surface. Most of the County's water supply originates from the underground resources. Therefore, ensuring a constant, unpolluted supply is important. Unfortunately, in urbanized areas the lands which serve as a natural "sponge" and transmit rain waters to the groundwater reserves are often built upon. The roofs, asphalt, and concrete negate the "sponge" action and water supplies are reduced.

Three major river drainage basins exist in the County: the Eel River basin, the Russian River basin, and the coastal basin. Other important water resources include Lake Mendocino, Van Arsdale Reservoir, several natural small lakes, and several mineral springs and small reservoirs.



OBJECTIVES: Identify and conserve rivers, streams, watersheds, coastal areas, harbors, estuaries, reservoirs, potential reservoirs and lands adjacent thereto which are especially important for water supply, recreation, fish and shellfish production, scientific study or scenic value. The County should be watchful that its potential future water needs not be compromised by short-sighted regional agreements.

IMPLEMENTATION: The zoning ordinance. Mendocino County Comprehensive Soil and Water Plan.

#### E. FISH

Fresh water rivers are important producers of fish. The most important species for commercial and sportfishing are King salmon, Silver salmon, and Steelhead. These species are anadromous - that is, they spend much of their life in the ocean, returning to fresh water streams to spawn.

Rivers and creeks which have been identified as critical salmon and steelhead spawning and nursery habitats include the Eel River, Russian River, Ten Mile River, Noyo River, Big River, Navarro River, Elk Creek, Garcia River, the Gualala River, and their tributaries. Estuaries at the mouths of these rivers provide important nursery and feeding areas for fish.

Fishing, both commercial and sport, plays an important role in Mendocino County's economy.

Virtually all of the fresh water habitats have been adversely affected by such practices as poor logging methods, construction of flood control facilities without regard to the fish habitat, road construction, and over-grazing. Some industries and septic effluent from urban areas have contributed to a decline in water quality. Great care must be taken to assure that future housing and other urban development do not adversely affect the quality of fish habitat.

The Pacific Ocean provides a valuable habitat and, in turn, supports an important commercial fishing operation and attracts sport fishermen.

OBJECTIVES: Identify and conserve rivers, streams, watersheds, coastal areas, harbors, estuaries, reservoirs, and lands adjacent thereto which are especially important for fish and shellfish production. Improve stream habitat for anadromous fish.

IMPLEMENTATION: The zoning ordinance.

## F. WILDLIFE

Wildlife, like fish, is important for ecological, recreation, and economic reasons.

Deer and other game species range throughout the County. The northeastern portion of the County is an important winter range for migratory deer. While deer create serious problems by depredations on agricultural crops, they act as a stimulus to the attraction of hunters and many hunting clubs have been established in the County. Quail, grouse, rabbit, squirrel, and band-tailed pigeons are abundant in the County. The many rivers, streams, and lakes attract a number of waterfowl species. All these contribute to the hunting industry.

Non-game species are equally important for they provide for the proper functioning of their ecosystems. Species as well as bulk number of wildlife have been diminishing in the State - due primarily to the destruction of habitats by urbanization or pollution. Mendocino County, however, retains a number of natural habitat areas and the wildlife which resides there.

The California Fish and Game Commission has declared a number of species to be either rare or endangered. Some of these species, such as the California Brown Pelican, Southern Bald Eagle, and American Peregrin Falcon, have habitats within the County or migrate through the County or its off-shore waters. Local government, like all responsible jurisdictions, should take every precaution to protect the habitats of the rare and endangered species. But, even more important, such species should serve as an example to encourage the protection of all wildlife and their habitat before the rare and endangered list becomes even more extensive.

OBJECTIVES: Identify and conserve habitats especially important to deer, upland game, furbearers, representative animal communities, and rare species. Encourage controlled burning for the improvement of brush ranges for enhancement of wildlife habitat. Encourage deer herd management. Retain existing County control of deer herd management. Identify and preserve areas of special biological significance for education and scientific research.

IMPLEMENTATION: The zoning ordinance.

## G. PLANTS

Plants, like animals, are subject to pressures from human civilization and have undergone vast changes due to management by man. The major pressures upon plant communities have been from forestry, intensive agriculture, grazing, and

urbanization. Mendocino County is privileged to have examples of virgin communities, both with regard to forests and grasslands. In addition, the California Native Plant Society has listed 36 species of plants which they consider either rare or endangered within Mendocino County.

OBJECTIVES: Identify and conserve representative plant communities and endangered species. Identify and preserve areas of special biological significance for education and scientific research.

IMPLEMENTATION: The zoning ordinance.

#### H. MINERAL RESOURCES

A number of mineral resources exist within the County. Minerals are necessary in our lives and play an important role in the economy of the County. Unlike some resources, minerals are essentially non-renewable.

Most predominant of the minerals in Mendocino County are sand and gravel. Deposits are to be found along many rivers and streams in the County. Several commercial extraction operations are currently underway. Deposition of gravel along a meander of a stream may take place every year, but this does not indicate that the resource is infinitely renewable. The long-term effects of yearly harvesting of a gravel resource are largely unknown but may involve stream bed location and depth changes. Gravel and rock suitable for rip rap are found in quarries throughout the County. High quality rock is very limited.

All mining operations including removal of sand and gravel may be deleterious to the other values of the environment.

Other fairly prominent resources include manganese, petroleum, mineral springs, and geothermal power.

OBJECTIVES: Identify and conserve areas suitable for production of minerals, geothermal power, gravel, rock, semi-precious stones, natural gas, and oil. Set guidelines for extraction of gravel and rock which will minimize deleterious environmental impacts, maintain equilibrium of river banks, and prevent unsightly scars.

IMPLEMENTATION: The zoning ordinance. Consider establishing an ordinance which would minimize deleterious environmental impacts and require site rehabilitation of mining operations.

## II. INCREASE RECREATIONAL OPPORTUNITIES AND ENHANCE CULTURAL WELL-BEING

Recreational activities, aesthetic enjoyment of open spaces, and various opportunities for appreciation of our out-of-doors are necessary for both the physical and mental health of our population. Mendocino County open space is important on a State-wide basis for provision of these resources. The County, in turn, benefits economically by providing access to these resources.

Cultural, or man-made, resources are as important as natural ones. Historical and cultural features add distinct pleasure and help provide a basic understanding of our society. In addition to a contribution to the County's tourist industry, and hence the County's economy, cultural resources provide a rallying point for community pride.

### A. RECREATION

The Pacific Ocean along with the many rivers, lakes, and forests of Mendocino County provides residents with great recreation opportunities. The State's greatest recreational resource, yet a resource which has often been abused, is the shoreline. The Mendocino coastline has not suffered as the more densely populated ocean front areas have. However, pressure for development along the coast is sufficient to encourage present action to preserve appropriate lengths of shoreline. Of 132 miles of shoreline on our coast, only 13 miles are publicly owned. A unique opportunity exists to work with the North Coast Region of the Coastal Zone Conservation Commission in developing a meaningful plan for the Mendocino Coast in the next two years. The eventual implementation of any such plan will ultimately depend a great deal upon the ability and willingness of local agencies.

Funds from many sources are available each year for acquisition and development of recreational areas. The County can take advantage of these programs if sufficient desire is shown.

OBJECTIVES: Identify present and potential recreational areas. Provide adequate amounts of recreational areas at appropriate locations throughout the County. Provide for different types of recreation, including rest stops, sporting, hunting, fishing, bicycling, riding, camping, off-road vehicles, water-oriented activities, back-packing, and wilderness experiences. Encourage private development of recreational activities and areas. Provide for proper placement of second home recreational subdivisions. Ensure that recreational activities are safe, clean, and compatible with



surrounding land uses. Identify valuable scenic areas and set guidelines for their development. Establish vista areas.

IMPLEMENTATION: The zoning ordinance. Provide for public access to various lands, including the shoreline and other public areas, by acquiring access easement or fee title where access is crucial.

## B. CORRIDORS

Parks and open space take on a new meaning and become more significant when they are tied together into a network by scenic highways, trails, and greenbelts. Greenbelts may serve to provide recreational facilities or they may serve purely aesthetic ends.

The State has developed the "Master Plan of State Highways Eligible for Official Scenic Highway Designation," and has identified two potential scenic routes therein: State Highway 1-U.S. 101 and State Highway 20. Beyond posting a poppy sign along the highway once adopted as a State Scenic Route, the State provides little assurance that the scenic qualities of the corridor will be maintained. Other roads in the County are also suitable for classification as scenic routes. Mendocino County will be developing a Scenic Highways Element to the General Plan by September, 1974, as required by State law.

An appropriate system of equestrian, hiking, and bicycle trails can be planned through the development of a Recreation Element to the County's General Plan. Such trails could provide recreation in themselves and could also serve to connect the various City, County, State, and Federal open space recreation facilities.

The County has an opportunity for joint study and implementation with cities and other agencies to develop greenbelts which surround urban areas, thereby retaining the character and visual identity of communities. Greenbelt treatment along rivers, flood control channels, and utility easements provide aesthetic enhancement as well as multiple use for little used and single-purpose facilities.

OBJECTIVES: Designate scenic State and County roads and highways. Conserve open space along transportation corridors. Discourage strip development. Provide linkages between open space areas. Encourage clustering of all types of development. Coordinate with the Local Agency Formation Commission to plan for orderly City limit expansions.

IMPLEMENTATION: Develop Scenic Highways and Recreation



Elements to the County's General Plan. Adopt a sign ordinance. Support State legislation which requires the undergrounding of utilities within future residential, commercial, and industrial subdivisions. Adopt enabling ordinances for scenic easements, open space easements, and density transfer. Free-way agreements entered into by the County should be consistent with this Plan.

#### C. HISTORICAL AND CULTURAL AREAS

Mendocino County is privileged to hold many historical, cultural, and archeological attractions. A wealth of sites exist, for example Squaw Rock, the Skunk Train, Fort Bragg, Round Valley, and the town of Mendocino. A County Museum has recently been established. Much important work on identification, research, and conservation of sites needs to be done.

OBJECTIVES: Identify and preserve areas of major historical and archeological significance and continue research on such areas. Encourage private and public research to locate areas of historical or archeological importance that are still unidentified.

IMPLEMENTATION: Coordinate with the County Museum staff and the County Administrator's office to create an appropriate body to identify, research, and authenticate sites, pursue implementation programs, and pursue State and Federal grants for site study, preservation, and designation.

### III. ENSURE THE HEALTH AND SAFETY OF MENDOCINO COUNTY RESIDENTS AND VISITORS

The removal of hazardous land from intensive residential development is one of the major benefits of open space land. Another important use of open space is reserving land necessary for the provision of water and air quality.

Earthquake faults, tsunami areas, landslide areas, flood plains, steeply sloping land, and areas under airport flight paths all present potential hazards to public safety and are questionable areas for urbanization. Individual life and property is placed in jeopardy as well as burdens to taxpayers in general for they must subsidize an eventual rebuilding of roads, sewers, public buildings, and utilities after destruction in a known hazardous area.

A high quality of water resources, air resources, and freedom from excessive noise are necessary for a healthy existence both in rural and urban areas.

#### A. FLOOD PLAINS

Many rivers and streams present a potential flood hazard to nearby lands. Even though recent floods have not been overly destructive within Mendocino County, the potential will increase if urbanization is allowed to encroach into the flood plain. With urbanization, the covering of land with impermeable surfaces increases the potential for flooding.

Flood plains need to be effectively defined. Restriction of uses to appropriate activities such as agriculture and seasonal recreational developments will protect both the property owner and the County.

OBJECTIVES: Identify and set guidelines for development of flood plains.

IMPLEMENTATION: Continue present program to implement flood plain zoning.

#### B. FAULT ZONES AND OTHER GEOLOGICAL HAZARDS

A number of known faults exist within the County, the most notable being the San Andreas and the Healdsburg. The San Andreas fault enters the County from the ocean just north of Manchester and runs southeasterly into Southern California. The Healdsburg fault begins in the Boonville area and runs southeasterly into Sonoma County.

Other forms of geological hazards, such as subsidence and hardpans, exist in the County.

OBJECTIVES: Identify and set guidelines for development of areas having geological hazards, including fault zones and other limitations.

IMPLEMENTATION: The land division regulations, the Uniform Building Code, and State implementation of the Alquist-Priolo Geologic Hazard Zones Act. Develop a Seismic Element to the County's General Plan.

#### C. AIRCRAFT FLIGHT ZONES

Five publicly owned airports exist in the County. The Federal Aviation Administration has identified clear zone areas at the ends of runways. These areas should be appropriately zoned and used for park, recreation, agriculture, and other open space uses only. Areas around airports are in general subject to higher risks and noise.

OBJECTIVES: Identify and set guidelines for development of areas near airports.

IMPLEMENTATION: Continue present program to implement airport clear area zoning. Begin planning for areas near airports.

#### D. STEEP SLOPES AND OTHER SOIL HAZARDS

Much of the County lies in steeply sloping and rugged territory. As the bottom lands of the County become utilized, additional development pressures will be placed on the uplands of the County where many soil related hazards exist. These conditions may cause problems in road construction, provision of proper foundations for structures, and maintenance and stability. In turn, these conditions may cause further erosion and water quality problems. Many of these problems can be mitigated by appropriate design standards, careful engineering, and density controls.

OBJECTIVES: Identify and set guidelines for development of areas with steep slopes and areas having soil limitations, including high erosion hazard, severe soil pressure variations, severe shrink-swell behavior, and septic system unsuitability.

IMPLEMENTATION: Adopt an ordinance which controls the density and type of development on steeply sloping land. Consider adoption of grading and cliff setback ordinances. The zoning ordinance and land division ordinance. Conduct a thorough study of pygmy soils to determine their best use.

#### E. SANITARY LANDFILLS

OBJECTIVES: Identify and set guidelines for development of sanitary landfills.

IMPLEMENTATION: Continue present program of planning for solid waste management.

#### F. FIRE RISK AREAS

OBJECTIVES: Identify and set guidelines for development of areas with extreme fire risk. Encourage controlled burning for fuel reduction as a vital element in fire prevention.

IMPLEMENTATION: Regulations of the State Division of Forestry. The zoning ordinance.

#### G. WATER QUALITY

Mendocino County is blessed with a wealth of water resources. Just as important as quantity, however, is quality. The largest lake or the widest river is virtually useless if it cannot be used for recreation; if it cannot support fish and wildlife; if it is too polluted to supply domestic uses; or if it provides not even basic aesthetic enjoyment. Such adverse qualities may seem to residents of Mendocino County not to exist, but to many others in heavily urbanized and industrial areas they have become a reality.

As the County develops, it may become necessary to implement strict controls concerning all effluents including secondary and tertiary waste water treatment systems.

OBJECTIVES: Identify and conserve all areas necessary for the protection of water quality. Set performance standards for industry.

IMPLEMENTATION: The Mendocino County Comprehensive Soil and Water Plan.

#### H. AIR QUALITY

Mendocino has unique problems with air quality even though the general quality is excellent. Due to the forest products industry, wildfires, vehicle emissions, and topography, local air basins may experience temporary bouts of smog. Rarely do the pollutant levels reach thresholds harmful to health, but visible contaminants can affect mental health and the attractiveness of the region.

OBJECTIVES: Identify and conserve areas required for the protection and enhancement of air quality. Set performance standards for industry.

IMPLEMENTATION: Current Air Pollution Control Board standards.

I. NOISE

OBJECTIVES: Identify and conserve areas required for attenuation and mitigation of noise pollution.

IMPLEMENTATION: Continue present program for adoption of a noise ordinance. Develop the Noise Element to the County General Plan.





## IMPLEMENTATION TOOLS

Following are listed some of the many and varied implementation techniques and programs. This list is supplemented by the following chapter: Implementation Action Program. The purpose of the list here is to outline some of the many programs available. It is included because the stress on any open space-conservation program must be placed upon flexibility. In order to implement this Plan it is absolutely necessary to use as broad a range of acquisition-regulation techniques as possible. No single technique is sufficient by itself - a successful program will require most, if not actually all, of the following:

### I. REGULATORY POWERS

Local governments have the authority to regulate development. However, most of these regulatory powers have dealt with development and have not been used to the end of preserving open space and physical resources. Some regulatory powers which lend themselves to open space-conservation are:

- Open Space Zoning
- Flood Plain Zoning
- Large Lot Zoning
- Cluster Development
- Site Plan and Architectural Review
- Overlay Zones which control grading, signs, and landscaping
- Setbacks
- Large Planned Unit Developments (PUD) which allows flexibility not afforded to the typical small subdivision.

### II. ACQUISITION

Acquisition can be either for fee title or for certain development rights only; that is, purchase of an easement.

#### FUNDING SOURCES:

##### A. FEDERAL REVENUE SHARING

Designed to be project oriented, the option is left open to local jurisdictions of the use of their Revenue Sharing funds. A legitimate use for open space acquisition, park development, and environmental enhancement.

##### B. HUD OPEN SPACE GRANTS

The Department of Housing and Urban Development provides up to 50/50 matching funds for open space acquisition. Applications are judged according to the following priorities:

1. Projects located in low income neighborhoods.
2. "...preservation of the last remnant of open space available in an area..."
3. "...preservation of any natural features which will help to preserve the identity of any given area..."
4. Acquisition of historic sites.
5. Provision of access to various open space opportunities, such as shoreline access.

In addition, HUD does provide up to 100 percent Demonstration Grants for unique projects and techniques.

#### C. LAND AND WATER CONSERVATION FUND

Fifty/fifty matching funds made available by the Bureau of Outdoor Recreation (Department of the Interior) for acquisition and development for open space-recreation projects. The funds are directed to the more basic rather than elaborate projects.

#### D. OTHER FUNDING PROGRAMS

A variety of Federal and State matching grants are available for the restoration and maintenance of environmental quality. These include funds from the Environmental Protection Agency for water and waste facilities planning, water quality control measures, and water reclamation projects; the State Wildlife Restoration Fund, administered by the Department of Fish and Game for acquisition and development of significant wildlife areas.

#### E. TAX SOURCES

Some potential tax sources to fund open space-conservation projects include:

- Sales Tax on sporting goods
- Horse Tax
- Highway Users Tax increase
- Recreational Vehicle License

#### G. BONDS

People throughout the State have shown increased recent concern for open space and environmental issues, and the voters of many communities have been passing bond issues at general elections.

A State park bond will be placed on the general ballot in June of 1974. If passed by the voters, Mendocino County will be eligible to receive funds for park projects. The State Resources Agency is currently planning project uses for the 1974 bond funds. Mendocino County should make inputs at this time to the State in the form of "wish lists" for expenditure of the funds within the County.

#### G. GIFTS

Beyond charity as a gift to society, incentives can accompany the giving of land. By the principle of "unlimited deduction" an individual may receive more than tax credit for donations when the donation is to a public agency for open space, park, or recreation purposes.

Another method to encourage the giving of land is the gift-with-life-tenancy approach. An individual gives his land and retains the right to live on the land. Usually accompanying this right, as an incentive, is a release of the individual from paying taxes on the property.

#### H. FEE SIMPLE

The most commonly used method of acquiring land is buying it outright - buying the fee simple. However, sometimes overlooked are methods to purchase land on an installment basis or purchase with leaseback. The former allows governmental entities to buy land over a period of years. The benefit is that advantage can be taken of low land prices even though government may not desire to spend the full purchase price in any given fiscal year. This situation is particularly prevalent during times of economic recession when land prices are low.

Purchase with leaseback is particularly appropriate with regards to farming. Many people desire to continue farming their land. However, increases in water costs, farm labor costs, machinery costs, and high land taxes often make farming economically unfeasible. Under a purchase-with-leaseback plan, government buys land and leases it back to the farmer at a modest rate.

#### I. EASEMENTS

Public agencies may elect to acquire just certain rights to

property, rather than the fee simple. For example, a property owner may choose to negotiate a scenic or open space easement on a portion of his property. In exchange for agreeing not to develop that portion of the property, the owner receives lower tax assessments.



## IMPLEMENTATION ACTION PROGRAM

The following steps are recommended for implementation of the objectives mentioned in this Plan.

Changes necessary to implement an open space zoning ordinance in accordance with State law consist of increasing the minimum parcel size in the intensive agricultural zone (A-2) to 40 acres from 2 acres. No other changes in the zoning ordinance are necessary to implement the policies of this Plan.

Current County rules and regulations should be enforced. These include the zoning ordinance, the land division ordinance, the Uniform Building Code, and the standards of the Air Pollution Control Board. To assist in this enforcement, State law and County ordinances should be amended to provide that a County has the authority to require that the vendor of any real property furnish the vendee a recorded statement signed under penalty of perjury the extent to which the property being sold has the following: water, sewage, utilities, zoning, General Plan, access, etc.

### ZONING CHANGES

An intensive agricultural zone (for example, A-2) should be established on our most productive crop land and should not permit reduction in parcel size below 40 acres. Present programs for implementation of airport clear area zoning and flood plain zoning should be completed as soon as possible.

### GENERAL PLAN CHANGES

Develop a Recreation, Noise, Safety, Seismic, and Scenic Highways Element for the County's General Plan. Lands suitable for agricultural production, including timber, rangeland, and crop land, should remain in acreages suitable for production. For prime forest lands, parcels should remain in parcels of at least 160 acres.

### PROPOSED ORDINANCES

Continue present program for adoption of a noise ordinance. Adopt an ordinance which controls the density and type of development on steeply sloping land. Adopt a sign ordinance. Adopt an ordinance which requires dedication of park land within all future residential subdivisions where desirable.

Consider adoption of grading and cliff setback ordinances. Consider establishing an ordinance which would minimize deleterious environmental impacts and require site rehabilitation for mining operations.

#### OTHER RECOMMENDATIONS

All minor divisions should be consistent with this Plan. Divisions which create parcels of less than 20 acres should be carefully reviewed in light of impact and use of the land.

All environmental impact reports, both for public and private development, should be reviewed in light of this Plan.

Prior to the disposition of any County-owned surplus property, the Planning Department should review the matter for open space-conservation potential and possible retention in public ownership.

Acquire open space or scenic easements in critical areas.

Conduct a thorough study of the relationship between various taxing methods, total revenues, and land use.

Provide for public access to various lands, including the shoreline and other public areas, by acquiring access easements or fee title where access is crucial.

Freeway agreements entered into by the County should be consistent with this Plan.

Coordinate with the County Museum staff and the County Administrator's office to create an appropriate body to identify, research, and authenticate sites, pursue implementation programs, and pursue State and Federal grants for site study, preservation, and designation.

Begin planning for areas near airports.

Continue present program of planning for solid waste management.

To assure coordination of open space-conservation planning efforts between County departments and agencies, a Council should be established of representatives from Planning, Public Health, Public Works, Agriculture, the Farm Advisor's Office, Resource Conservation District, and other appropriate entities.

Conduct a thorough study of pygmy soils to determine their best use.

#### BOUNDARIES

Because of the small scale of the maps which accompany this Plan, it is conceivable that questions will arise as to whether or not a given area is actually within or out of the boundary for the various open space uses as delineated by this Plan. When questions arise, the larger scale maps available at the Planning Department should be consulted. If it is still not clear whether or not an area is within a boundary as stipulated by this Plan, a procedure should be followed to make determination. An Environmental Impact Report may be useful in establishing the appropriate classification. Recommendations should be made to the deciding body prior to consideration of the entitlement.



## GOALS AND OBJECTIVES

### I. CONSERVE OUR NATURAL RESOURCES

1. Identify and conserve lands suitable for prime agricultural production, including timber, various crops, and rangeland. Encourage sustained yield management of forest land. Create buffer zones around intensive agriculture.
2. Identify and conserve rivers, streams, watersheds, coastal areas, harbors, estuaries, reservoirs, potential reservoir sites, and lands adjacent thereto which are especially important for recreation, water supply, fish and shellfish production, or scientific study, or scenic value. Improve stream habitat for anadromous fish.
3. The County should be watchful that its potential future water needs not be compromised by short-sighted regional agreements.
4. Identify and conserve habitats especially important to deer, upland game, furbearers, representative animal communities, and rare and endangered species. Encourage deer herd management.
5. Encourage controlled burning for the improvement of brush ranges for livestock production, enhancement of wildlife habitat, improvement of ground cover for soil and water conservation, and fuel reduction as a vital element in fire prevention.
6. Identify and conserve representative plant communities and rare and endangered species.
7. Identify and conserve areas suitable for production of minerals, geothermal power, gravel, rock, semi-precious stones, natural gas, and oil. Set guidelines for extraction of gravel and rock which will minimize deleterious environmental impacts, maintain equilibrium of river banks, and prevent unsightly scars.
8. Identify and preserve areas of special biological significance for education and scientific research.



- II. INCREASE RECREATION OPPORTUNITIES AND ENHANCE CULTURAL WELL-BEING
1. Identify present and potential recreational areas.
  2. Provide adequate amounts of recreational areas at appropriate locations throughout the County.
  3. Provide for different types of recreation, including rest stops, sporting, hunting, fishing, bicycling, riding, camping, off-road vehicles, water oriented activities, back-packing, and wilderness.
  4. Encourage private development of recreational activities and areas.
  5. Provide for proper placement of second home recreational subdivisions.
  6. Ensure that recreational activities are safe, clean, and compatible with surrounding land uses.
  7. Identify valuable scenic areas and set guidelines for development within them.
  8. Establish vista areas.
  9. Designate scenic State and County roads and highways.
  10. Conserve open space along identified scenic corridors and discourage strip development.
  11. Encourage clustering of all types of development.
  12. Coordinate with LAFCO to plan for orderly City limit expansions.
  13. Provide linkages between open space areas.
  14. Ensure adequate open space in and around existing and planned residential areas.
  15. Identify and preserve areas of major historical and archeological significance and continue research on such areas.
  16. Encourage private and public research to locate area of historical or archeological importance that are still unidentified.

III. ENSURE THE HEALTH AND SAFETY OF MENDOCINO COUNTY  
RESIDENTS AND VISITORS

1. Identify and set guidelines for development of the following areas:
  - a. Areas near airports
  - b. Flood plains
  - c. Areas with steep slopes
  - d. Areas having soil limitations, including high erosion hazard, severe soil pressure variations, severe shrink-swell behavior, and septic system unsuitability.
  - e. Sanitary landfills
  - f. Areas with extreme fire risk
  - g. Areas having geological hazards, including fault zones and other limitations
  - h. Combinations of the above
2. Identify and conserve areas required for protection of water quality.
3. Identify and conserve areas required for the protection and enhancement of air quality.
4. Identify and conserve areas required for attenuation and mitigation of noise pollution.



PART II  
ENVIRONMENTAL INVENTORY OF RESOURCES





## LAND AREAS AND USES

### LAND OWNERSHIP

Mendocino County has a large area of land in private ownership, 79.5 percent, compared with many counties of California where range and woodlands are major characteristics. Some 4.5 percent are State, County, and municipal lands, making a total of 84 percent in non-Federal ownership. This leaves 16 percent in Federal ownership and custody consisting of 7.8 percent National Forest, 6.0 percent Bureau of Land Management, 0.9 percent Indian, and 1.3 percent miscellaneous Federal reserved areas.

These figures are set forth by acres and percent of total land in Table 1.

TABLE 1  
LAND OWNERSHIP, MENDOCINO COUNTY

	Acres	Total Land Percent
Federal:		
National Forest	174,000	7.8
Bu. Land Management, Dept. of Interior	133,735	6.0
Indian	21,000	.9
Other	30,265	1.3
Total Federal	359,000	16.0
State, County, and Municipal	102,000	4.5
Private	1,785,000	79.5
Total All Land	2,246,000	100.0

Source of Data: U. C. Bulletin, Timber Marketing & Land Ownership in Mendocino County, 1968

Of the land in private ownership, 469,000 acres are owned by wood processing companies. This is 36 percent of the County's total land area.

### LAND USES

The uses of land in the County are related to land ownership in a broad sense of the term. Some 5.9 percent are in crops, pasture, and fallow; 15.4 percent are in woodland; 27.0 percent are in range and pasture; and 1.3 percent are in other

uses. These make up what the census calls agricultural lands or land in farms - 47.6 percent of the total area of the County. What remains is 52.4 percent of the total area, classified as not in farms. Table 2 shows the acreage of each of these land use classes.

TABLE 2

AGRICULTURAL LAND USES, MENDOCINO COUNTY, 1960

Land in Farms:	Total Land	
	Acres	Percent
Cropland in crops or fallow	34,732	1.5
Cropland used for pasture	53,524	2.4
Woodland pasture	345,191	15.4
Range and pasture	605,594	27.0
Other land	29,030	1.3
Total Land in Farms	1,068,071	47.6
Total Land Not in Farms	1,176,409	52.4
Total Land Area	2,244,480	100.0

Source of Data: U. S. Census

The foregoing broad use classification does not fully reflect some other important features of the land use pattern, namely the wildlands which can best be delineated in terms of vegetative types. These are set forth in Table 3.

TABLE 3

WILD LAND USES, MENDOCINO COUNTY, 1960\*\*

Major conifer	1,097,000	Acres
Minor conifer	50,000	"
Woodlands (Hardwoods)	112,000	"
Woodlands grass	219,000	"
Woodland-Chaparral	89,000	"
Chaparral	122,000	"
Grass	264,000	"
Bushy Herb	2,000	"
Marsh	*	"
Unclassified	92,000	"
Total	.	"

\*Less than 500 acres

\*\*The following acres of conifer forest soils occur in the County:

Redwood, 692,000; Douglas Fir, 371,000; Pine, 26,000; and Pine-Douglas Fir, 78,000; or a total of 1,167,000 acres.

Source of Data: Wildlands Soils & Associated  
Vegetation of Mendocino County, 1964

At present, the flood plains are intensively cropped where irrigation water is available. The major crops are pears, prunes, walnuts, irrigated pasture, and hay. The terrace soils are mostly not irrigated and are used for vineyards in the interior valleys and for pasture on the coast. Old and second growth timber is being rapidly logged. Many of the grazing lands are depleted or poorly managed. Recreation and hunting are of seasonal importance in these uplands.



## GEOLOGY

### COASTAL AREA

#### RUSSIAN RIVER BASIN AREA

The basin contains rocks typically found in the Northern California Coast Ranges. The rocks range in age from Late Jurassic to Recent and are predominantly marine sediments. About 79 percent of the area is underlain by Franciscan rocks or rocks generally associated with the Franciscan. These rocks include the undivided Cretaceous marine sedimentary rocks or coastal belt rocks of the Franciscan formation (K), "typical" Franciscan rocks (KJf), Franciscan volcanic and metavolcanics (KJfv), and ultrabasic rocks, such as serpentinite (ub). The Great Valley sequence comprises about 3 percent of the rocks in the basins and is comprised of Upper (Ku) and Lower (Kl) Cretaceous marine sedimentary rocks. Tertiary marine (Tm) sediments comprise about 2 percent of the rocks; Pliocene and Pliostocene volcanic (QPv) and sedimentary (Qmc) rocks comprise 10 percent; and the remaining 6 percent of the basin is underlain by alluvium (Qal). The extent of these geologic assemblages in the coastal basin is shown in the table "Area of Major Geologic Units."

The Franciscan formation is a heterogeneous mass of sedimentary, volcanic, and metamorphic rocks highly fractured and deformed by folding, faulting, and metamorphism. The formation has been intruded by basic and ultra-basic rocks that are predominantly serpentinitized. The volcanic rocks, which are interbedded with marine sediments, are mostly submarine lava flows that are now largely altered to greenstone. By far the most prevalent rock type in the Franciscan formation is greywacke, a sandstone, which is commonly associated with minor amounts of shale. Chert is also common. The Great Valley sequence, although about the same age as the Franciscan formation, has less volcanic rock and chert and many more fossils; it is also much less structurally deformed and much more regularly bedded.

Tertiary rocks outcrop in an area west of the San Andreas Fault and in small isolated areas near the coast. Generally, the Tertiary rocks are of marine origin and consist of sandstone, siltstone, and conglomerate.

Erodibility of the various broad geologic formations or assemblages is variable and depends upon many factors such as mineralogy, degree of weathering, and structural history.





TABLE 4

AREA OF MAJOR GEOLOGIC UNITS - SOUTHERN BASINS  
(SQUARE MILES)

Map Symbol	Geologic Assemblage	River Basin	
		Mendocino Coastal	Russian
Qal	Alluvium	24	130
QMC	Plio-Pleistocene marine and nonmarine sediments	86	166
QPv	Plio-Pleistocene Volcanics	--	87
Tm	Tertiary marine sediments	78	--
K	Undivided Cretaceous marine sediments	1,787	189
Ku, K1	Cretaceous marine sediments	34	56
KJf	Franciscan formation (marine sediments)	69	728
KJFv	Franciscan volcanics and metavolcanics	15	80
ub	Ultrabasic rocks (mostly serpentinite)	5	49
JK	Knoxville formation (marine sediments)	--	--
	Totals	2,098	1,485

Generally, the Franciscan formation is highly unstable, largely because of the presence of both small and very large faults and shear zones often hundreds of feet wide. The deeply weathered Franciscan formation contains shale interbedded with more massive rocks, and serpentinite is common. These inherently weak structural features, combined with high rainfall, prolonged storms, high peak flows, and rugged terrain, account for the widespread instability and erodibility of the Franciscan formation. Consequently, landslides, streambank erosion, and soil creep are common.

#### EEL RIVER AREA

The Coast Ranges province, which includes the Eel River Basin, extends from near Santa Barbara to the Oregon border and from the Central Valley to the Pacific Ocean. The highest sediment yields for streams of comparable size in the province, and for that matter in the State, are produced by streams draining the Coast Ranges north of San Francisco Bay. The Eel River has the highest average annual sediment

yield per square mile and also has the highest reported yield per square mile of any stream of comparable size in the United States.

The basins contain rocks typical of those found in the northern part of the Coast Ranges province. The rocks range in age from Late Jurassic to Recent and are predominantly marine sediments. About 80 percent of the area is underlain by the Franciscan formation and the rocks generally associated with it. The great Valley sequence comprises about 7 percent, and Tertiary rocks comprise about 5 percent of the area. The remaining 8 percent is underlain by alluvium and terrace deposits. The extent of these geologic assemblages is shown in the table below:

	Area (Square Miles)
	<u>Eel River Basin</u>
Franciscan formation	3,046
Great Valley sequence	339
Tertiary formations	207
Alluvium and terrace deposits	<u>313</u>
Total	3,905

The Franciscan formation is a heterogeneous mass of sedimentary, volcanic, and metamorphic rocks deformed by folds, faults, and metamorphism. The formation has been intruded by basic and ultrabasic rocks that are predominantly serpentized, and the volcanic rocks are interbedded with the marine sediments. These volcanic rocks are mostly submarine lava flows that are now largely altered to greenstone. By far the most prevalent rock type in the Franciscan formation is greywacke, a sandstone, which is commonly associated with minor amounts of shale. The Great Valley sequence, although about the same age as the Franciscan formation, has less volcanic rock and chert and many more fossils; it is also much less structurally deformed and much more regularly bedded.

Tertiary rocks crop out in extensive areas south and west of Round Valley in the Middle Fork Subbasin and in small isolated areas around Eureka and the Eel River Delta. Generally, the Tertiary rocks are of marine origin and consist of sandstone, siltstone, and conglomerate. Rocks of younger age also appear in isolated deposits; the most extensive of these occur along the coast from the mouth of the Eel River to Redwood Creek.

Erodibility of the various broad geologic formations or assemblages is variable and depends upon many factors, such

as mineralogy, degree of weathering, and structural history. Generally, the Franciscan formation, which includes about 80 percent of the rocks mapped in the basins, is highly unstable, largely because of the presence of both small and very large faults and shear zones often hundreds of feet wide. The deeply weathered Franciscan formation contains shale interbedded with more massive rocks, and serpentinite is common. These inherently weak structural features, combined with high rainfall, intense storms, high peak flows, and rugged topography, account for the widespread slope instability and erodibility of the Franciscan formation. Consequently, landslides, streambank erosion, and soil creep are prevalent and are the major modes of degradation of the landscape in the Eel River Basins.





## MINERALS

The following minerals have been found within the County:

Asbestos	Jade	Nickel
Carbondioxide	Limestone	Petroleum
Chromite	Magnesite	Phosphate
Coal	Manganese	Platinum
Copper	Methane Gas	Quicksilver
Feldspar	Mineral Springs	Sand and Gravel
Gold	Natural Gas	Sulfur

Sand and gravel deposits are found along Davis Creek, Garcia River, Russian River, and Ten Mile River. Seven commercial extraction operations are currently underway: one along Ten Mile River near Route 1, one on Garcia River near Point Arena, two on Davis Creek near Willits, and three along Russian River in the Vicinity of Ukiah.



## TOPOGRAPHY

Mendocino County contains 2,246,400 acres or 3,510 square miles. The southern boundary is about 90 miles north of San Francisco. The northern boundary is 80 miles south of Eureka. The measurements are 60 miles west to east and 100 miles north to south.

Mendocino County is bounded on the west by the Pacific Ocean. Near the shore are rocky cliffs, areas of sand dunes, and a few small valleys and strips of coastal terraces with a cover of grasses and forbs. East of these terraces are the hills of the coast range with steep to very steep slopes covered with redwood and Douglas fir. Twenty miles west of Highway 101 the topography is similar, but the vegetation shifts to predominantly grass, oak, and brush. This pattern continues to the eastern County line. The highest elevations are in the mountainous northeastern part of the County. San Hedrin Ridge is 6,900 feet and Anthony Peak is 7,000 feet. In the Russian and Eel River drainages are level flood plains and sloping terraces formed in fault valleys. Round Valley is the largest area of alluvial soil in the County.

### MENDOCINO COASTAL AREA

#### RUSSIAN RIVER BASIN AREA

The principal topographical features of Mendocino Coastal Area are the rugged northwest-southeast trending ridges and valleys. These reflect the geologic structural features of the basin, such as faults, folds, and contacts between formations, all of which have the same general alignment. The San Andreas Fault cuts through the western part of the basin and extends beneath the Pacific Ocean near Point Arena. This fault zone is characterized by a valley along most of its length. The Gualala and Garcia Rivers turn and follow the fault in their lower reaches.

As a consequence of the topography, the general trend of the main streams in the basin is northwest-southeast, and those streams crossing the structural grain of the basin usually do so at right angles, resulting in a rectilinear pattern known as trellis drainage.

Other important topographic features of this basin are the alluvial valleys and the coastline. Most of the irrigable land occurs in the broad alluvial valleys scattered throughout the basin; the most prominent ones are Anderson, Potter,

Redwood, and Ukiah Valleys and the alluvial plains around and along the Russian River. The rugged coastline is noted for its spectacular and relatively unspoiled scenery. Lake Mendocino, a man-made lake in the Russian River Basin, is the only sizeable impoundment.

#### EEL RIVER BASIN AREA

The principal topographical features of the Eel River Basin are the rugged northwest-southeast trending ridges and canyons. Maximum elevations are found along the eastern boundary and range from about 4,500 to 7,500 feet. Black Butte and Anthony Peak are prominent mountains with elevations of more than 6,500 feet. Although the North Fork, Middle Fork, and main stem of the Eel River flow south to southeast in their upper reaches, they eventually cross the structural grain of the basin and join in a northwest course toward the Pacific Ocean. Many of the smaller tributaries start out in a similar manner. The resulting trellis drainage pattern reflects the marked geologic control of the stream courses.

Gently sloping terraces ranging from 100 to 700 feet in elevation are found a few miles inland from the coast. Three relatively flat valleys (Laytonville, Willits, and Round Valley) are located in the mountainous part of the basins.

## CLIMATE

Mendocino County has moist cool winters and warm dry summers. Maximum temperatures range from a record high of 114°F at Ukiah to a high of 90°F at Fort Bragg. The lowest recorded minimum was 7°F at Covelo. The record low on the coast was 24°F. Rainfall ranges from an average of 80 inches in the northwest part of the County to 35 inches in the southeastern part. Maximum precipitation occurs in December, January, and February. The average growing season is about 260 days on the coast, 210 in the interior valleys, and 180 days in Round Valley (2).

### MENDOCINO COASTAL AREA

The climate of the Mendocino Coast Area is characterized by cool summers and cold, rainy, and snowy winters. Precipitation varies from 38 inches annually along the coastline to 70 inches annually in the mountains on the eastern area boundary and 80 inches in areas along the northeastern section of the boundary. The mean annual precipitation for the entire coastal area is approximately 50 inches. More than 97 percent of the total precipitation occurs in an eight month period beginning in October and ending in May. The other four months of the year average less than one inch per month, with August being least of all with only 0.01 of an inch. Inland, a substantial portion of the precipitation occurs as snowfall. Table 5 shows the mean annual precipitation at selected stations within and immediately adjacent to the Mendocino Coast Area. In Table 5, "mean" is the arithmetic mean or average.

TABLE 5

#### MEAN ANNUAL PRECIPITATION AT SELECTED STATIONS IN OR NEAR MENDOCINO COASTAL AREA

Station	Elevation (in feet)	Mean Annual Precipitation* (in inches)	Period of Record
Branscomb	2,000	81.07	1900-1923
Fort Bragg	80	37.65	1895-1959

\*Mean period 1905-1955. "Mean period" is a period which is believed to represent conditions of water supply and climate over a long period of time.



Temperatures in the Coastal Area are influenced by elevation, distance from the ocean, and the coast range, which separates the drainage area from inland areas. The average annual temperatures and average length of growing season for two representative stations are shown in Table 6. The temperatures presented are the arithmetic means of the daily minimum and maximum temperatures and the extreme minimum and maximum temperatures in degrees Fahrenheit for the indicated period of record. The length of frost free period in Table 6 represents the average period, in days, between the last day in spring and the first day in fall when the minimum daily temperature fell below 32 degrees Fahrenheit.

TABLE 6

RECORDED TEMPERATURES AT SELECTED STATIONS  
IN OR NEAR MENDOCINO COASTAL AREA

	Elev. in ft.	Mean* Temp. in ° F		Extreme*Temp. in ° F		Average* Length of Frost Free Period in Days	Period of Record
		Min.	Max.	Min.	Max.		
Branscomb	2,000	39.5	67.0	16	104	173	1900-1923
Fort Bragg	80	44.2	60.8	24	90	-	1931-1952

\*Based on period of record.

RUSSIAN RIVER BASIN AREA

The climate of the Russian River Basin Area is characterized by cold rainy winters and dry hot summers, with the summer heat tempered by the ocean near the coast. The mean annual precipitation for the unit is 44 inches. The unit has a well established climatology station network. There are 43 stations, several with records that date back to 1877. Climatic data for 6 of these stations having records for both precipitation and temperature beginning prior to 1930 are presented in Table 7.

The rainy season extends from October through May, and the growing season begins in April and ends in October. June has a slight amount of rainfall, less than one inch, while July, August, and September are virtually dry. The wettest months are December and January, with December rainfall averaging over eight inches. Rainfall distribution in the valley area generally varies from 40 inches in the main part to a low of 30 inches in the extreme southern portion. With increase

TABLE 7

## CLIMATIC DATA AT SELECTED STATIONS IN OR NEAR RUSSIAN RIVER BASIN AREA

Station	Elevation	Mean Annual Precipitation in Inches <u>a/</u>	Mean Annual Temperatures in ° F <u>b/</u>		Extreme Temperatures in ° F		Average Frost-free Period (in days)	Period of Record
Potter Valley Powerhouse	1,015	42.07 <u>c/</u>	-	-	14	111	-	1911-1959
Ukiah	623	35.54	42.5	73.9	12	114	-	1877-1959
Cloverdale	360	38.23	45.6	74.0	19	113	263	1877-1959

a/ Based on 1905-55 period of record

b/ Based on total period of record

c/ Based on 1911-55 period of record

in elevation, the precipitation increases and averages 50 inches in the foothills and mountains surrounding the valley. The highest intensity of rainfall occurs in the Mayacmas Mountains. In parts of this area the annual precipitation is 80 inches. At lower elevations in the mountain ranges surrounding the valley, modest amounts of precipitation occur as snow. An annual precipitation of 60 to 70 inches occurs in several other mountain areas in the area.

The mean annual temperature in the valley areas is 58°F ~ ranging from a mean of 47°F for January to a mean of 80°F for July. As can be expected, the portion of the area nearest the coast has a mean annual temperature 5°F cooler than the interior.

The coastal area also has fewer fluctuations from the mean. The temperatures presented in Table 7 are the arithmetic means of the daily minimum and maximum temperatures and the extreme minimum and maximum temperatures in degrees Fahrenheit for the indicated period of record. The length of average frost-free period in Table 7 for two representative stations represents the average period, in days, between the last day in spring and the first day in fall when the minimum daily temperature falls below 32°F.

#### EEL RIVER BASIN AREA

A wide variation of climate occurs within the 1,624 square mile area of the Eel River Basin Area. Moderate seasons are typical of the northern coastal section; and variable, generally more severe seasons are common to the inland valleys. In the coastal area the predominant influence on the climate is the moist air mass over and near the ocean. This air mass, and the overcast or fog generally associated with it due to the onshore winds, has a great moderating effect on the climate of the coastal area. The inland portion of the area, which is more removed from this oceanic influence, is comparatively free from this moderating effect. This inland area is subject to a wider range of temperature variation, both daily and seasonal, than the coastal area.

Average annual precipitation within the area varies from about 38 inches per year at Clovelo to about 51 inches per year at Willits. About 86 percent of the average seasonal precipitation occurs between November 1 and April 30. In the vicinity of the coast, there is generally a measurable amount of precipitation in every month of the year, while rainfall during the summer months is somewhat of a rarity in the inland valleys. At Dos Rios, for example, rainfall has

been recorded during the months of July or August in only nine of the 40 years that the precipitation gage has been in operation. Average snowfall at precipitation stations within the area varies from less than one inch on the coastal plains to about 55 inches at Bridgeville, the northeast corner of Mendocino near Anthony Peak. The average lowest elevation at which there is snow on the ground on April 1 is about 4,000 feet.

Maximum and minimum recorded seasonal precipitation and estimates of the 50 year mean seasonal precipitation at selected stations within or adjacent to the Eel River Basin Area are shown in Table 8. The extremes shown are the highest and lowest seasonal precipitations observed during the period of record indicated for each station. The 50 year mean seasonal values are estimates, except the recorded quantities shown for the Ukiah Station, of the average depth of rainfall which would have been observed at these stations if they had been active during the base period 1905-06 through 1954-55. It is considered that these mean values are representative of the long-term mean seasonal precipitation available to the unit.

TABLE 8  
RECORDED EXTREME AND ESTIMATED MEAN  
SEASONAL PRECIPITATION AT SELECTED STATIONS IN  
OR NEAR EEL RIVER BASIN AREA  
(In Inches)

Station	Elevation (in feet)	Annual Precipitation		Estimated 50 Year Mean	Years of Record Used
		Maximum	Minimum		
Branscomb	2,000	132.62 (1903-04)	46.12 (1919-20)	76.81	1901-1923 1933-1955
Covelo	1,390	72.60 (1937-38)	16.66 (1923-24)	38.18	1883-1895 1915-1925 1936-1939 1944-1960
Dos Rios	927	90.07 (1957-58)	17.79 (1923-24)	45.09	1921-1960
Willits	1,365	97.16 (1957-58)	18.55 (1923-24)	50.61	1912-1946
Ukiah	623	60.48 (1889-90)	16.19 (1923-24)	35.06	1878-1960

The climate of the Eel River Basin Area is generally illustrated by the temperature data presented in Table 9. These data, with the exception of the frost-free period values, were taken from the "Climatic Summary of the United States - Supplement for 1931 through 1952," Bulletin W, published by the U. S. Weather Bureau. The values for the frost-free period were derived by the Department of Water Resources and represent the average period between the last day in spring and the first day in fall when the minimum temperature fell below 32°F.

TABLE 9

TEMPERATURE DATA AT SELECTED STATIONS  
IN OR NEAR EEL RIVER BASIN AREA  
(In Degrees Fahrenheit)

Station	Elev. (in ft.)	Avg. Temperature			Extreme Temperature		Average Daily Variation	Frost- free Period (in days)
		Jan.	July	Annual	High	Low		
Covelo	1,390	40.0	74.6	56.4	111	7	32.3	168
Fort Bragg	80	47.5	56.6	52.9	90	24	16.6	277
Potter								
Valley P.H.	1,014	44.9	73.4	58.4	111	14	32.4	---
Ukiah	623	45.1	72.4	57.9	114	12	31.7	211



## SOILS

There are 21 different soil groups that have been mapped for Mendocino County. These are named for the major soil series that occur within each unit. A soil series is a group of soils that have about the same kind of profile or sequence of layers. Except for a difference in surface texture, all members of a soil series have major horizons or layers that are similar in thickness, arrangement, and other important characteristics. Some soil areas that have been mapped have the same soil series for which they are named, but differ by properties or qualities of major importance to use and management. These are separated (or phased) by indicating differences such as slope, surface texture, or depth of soil. (See Table of Soil Characteristics.)

The soil series names are tentative and may be changed when the soils of the Mendocino Area are correlated into the National Soil Classification System. Any changes in names will not affect the usefulness of the series because the soil properties and qualities do not change and the names are only a means of identifying the soil group.

The 21 soil groups for Mendocino County are organized into 7 major groups based on soil characteristics and qualities, including slope. The seven major groups and the soil types within each group are described below. (Please refer to Mendocino County Township Map, Scale 1" = 2 miles, which reflects these groups in color. The map is to be found in the Mendocino County Planning Director's office.)

Group 1 - Areas dominated by very deep, nearly level, well to poorly drained soils.

CM-CU	Clear Lake-Cole Association
MR-ZM	Maywood-Zamora Association

Group 2 - Areas dominated by deep, gently sloping to steep, moderately well to well drained, medium to strongly acid soils.

AA-Rs-AC	Arcata-Rohnerville Association, 0 to 9 percent slopes
Mz-Ct-F	Mendocino-Empire-Casper Association, 30 to 50 percent slopes

Group 3 - Areas dominated by shallow to deep, nearly level to moderately steep, well to somewhat poorly drained soils.

Ny-Ek-AE Noyo-Empire Association,  
0 to 30 percent slopes

Group 4 - Areas dominated by moderately deep to deep, well drained, gently sloping to very steep soils.

HF-Jp-AE Hugo-Josephine Association,  
0 to 30 percent slopes

HF-Jp-F Hugo-Josephine Association,  
30 to 50 percent slopes

Pu-Ta-AC Pinole-Talmage Association,  
0 to 9 percent slopes

Group 5 - Areas dominated by very shallow to moderately deep, well to excessively drained, gravelly or stony soils on gentle to very steep slopes.

Hj-AF Henneke Association,  
0 to 50 percent slopes

Group 6 - Areas dominated by moderately deep, sloping to steep, somewhat poorly drained soils on unstable geological formations.

Yr-EF Yorkville Association,  
15 to 50 percent slopes

Group 7 - Areas dominated by miscellaneous land types.

AZ-RW Alluvial land-Riverwash Association

TABLE 10

## SOIL CHARACTERISTICS AND QUALITIES

CS-77  
REV. 4-66

SURVEY AREA or WORKING UNIT Mendocino County General Soil Map

Date February 1967

Prepared by L. R. Plontkowski

Sheet 1 of 3

AREA OF WORKING			Profile (dry)			Natural Drainage	Subsoil Perm.	Runoff	Erosion Hazard	Effective Depth (inches)	AWC (inches)	Inherent Fertility	Present Land Use
Map Symbol	Soil Name	Position	Surface Layer	Subsoil	Substratum or Parent Material								
GROUP 1 - CM-CU	AREAS DOMINATED BY VERY DEEP, Clear Lake-Cole association		NEARLY LEVEL, WELL TO POORLY DRAINIED SOILS										
	Clear Lake		Black clay, slightly acid	Olive brown and yellowish brown clay, moderately alkaline	Olive brown and yellowish brown clay, moderately alkaline	Poorly	Slow to very slow	Slow	Slight	60+	8 to 10	Moderate	Pasture Cropland
	Cole		Grayish brown loam, medium acid	Dark gray, mottled, sandy clay, medium acid	Dark gray, mottled, sandy clay, medium acid	Somewhat poorly	Moderate to slow	Slow	Slight	60+	7 to 9	Moderate	Pasture Cropland
Mn-Wm	Maywood-Zadora association		Flood plains										
	Maywood		Brownish gray very fine sandy loam, medium acid	Grayish brown very fine sandy loam, medium acid	Brown silt loam, medium acid	Well	Moderately rapid	Slow	Slight	60+	7.5 to 11.5	High	Cropland
	Zadora		Brownish gray silt loam, medium acid	Grayish brown silt loam, slightly acid	Brown silty clay loam, slightly acid	Well to moderately well	Moderate to moderately slow	Slow	Slight	60+	7 to 10.5	High	Cropland
AL-OS-AE	AREAS DOMINATED BY DEEP, SLOPING TO STEEP, MODERATELY TO WELL DRAINIED SOILS		HILL TO STRONGLY ACID SOILS										
	Arata-Rohnerville association, 0 to 10 percent slopes												
	Arata		Dark brown loam, medium acid	Dark brown clay loam, strongly acid	Brown gravelly sandy loam, medium acid	Well	Moderately rapid to mod. slow	Slow	Slight	30 to 60	6 to 9	Low	Pasture
Mz-Ct-AE	Mendocino-Empire-Caspar association, 0 to 30 percent slopes		Uplands and coastal plains										
	Mendocino		Dark grayish brown loam, medium acid	Yellowish red clay, medium acid	Soft sedimentary rock	Moderately well	Moderate to mod. slow	Slow to medium	Slight to moderate	36+	7 to 10	Moderate	Woodland
	Empire		Brown sandy loam, medium acid	Yellowish brown clay loam, strongly acid	Soft sedimentary rock	Well	Moderate to mod. slow	Slow to medium	Slight to moderate	36+	3.5 to 11	Moderate to low	Woodland
Mz-Ct-E	Mendocino-Empire-Caspar association, 0 to 50 percent slopes		Uplands										
	Caspar		Grayish brown sandy loam, strongly acid	Yellowish brown sandy clay loam, very strongly acid	Soft sedimentary rock	Moderately well	Moderately rapid over mod. slow	Medium	Slight to moderate	36+	7 to 9	Moderate	Woodland
	Empire		Dark grayish brown loam, medium acid	Yellowish red clay, medium acid	Soft sedimentary rock	Moderately well	Moderate to mod. slow	Medium	Moderate to high	36+	7 to 10	Moderate	Woodland
GROUP 5 - Ny-Eu-AB	AREAS DOMINATED BY SHALLOW TO DEEP, NEARLY LEVEL TO MODERATELY SLOPING, POORLY TO MODERATELY DRAINIED SOILS		POORLY DRAINIED SOILS										
	Noyo-Empire association, 0 to 40 percent slopes												
	Noyo		Gray sandy loam, very strongly acid	Weakly cemented sandy clay loam, strongly acid	Sandstone rock, strongly acid	Somewhat poorly	Slow	Slow to medium	Slight to moderate	18 to 36	2 to 6	Low	Woodland Pasture
GROUP 6 - Hf-Jp-AB	AREAS DOMINATED BY MODERATELY DEEP TO DEEP, WELL DRAINIED, GENTLY SLOPING TO VERY STEEP SOILS		POORLY DRAINIED SOILS										
	Hugo-Josephine association, 0 to 30 percent slopes												
	Hugo		Brown loam, medium acid	Yellowish brown loam, strongly acid	Sandstone rock	Well	Moderate to mod. slow	Slow to medium	Slight to moderate	20+	3.5 to 11	Moderate	Woodland

<sup>1</sup> M-3020 <sup>1</sup>/ Total available water holding capacity within effective soil depth

TABLE 10

## SOIL CHARACTERISTICS AND QUALITIES

SURVEY AREA OF <u>MONTECINO COUNTY</u> <u>Montecino County General Soil Map</u> Date <u>February 1967</u> Prepared by <u>L. R. Piontkowski</u> Sheet <u>3</u> of <u>3</u>													
Map Symbol	Soil Name	Position	Profile (dry)			Natural Drainage	Subsoil Perm.	Runoff	Erosion Hazard	Effective Depth (inches)	AWC (inches)	Inherent Fertility	Present Land Use
			Surface Layer	Subsoil	Substratum or Parent Material								
GROUP 5 - Hj-AF	Chico-Plumosa very shallow steeple association, 0 to 50 percent slopes	Uplands	TO MODERATELY DEEP, WELL TO EXCESSIVELY IMAINED, GRAVELLY OR STONY SOILS ON G		STILE TO VERY STEEP SLOPES								
	Hemlock		Dark brown very gravelly loam, slightly acid	Dark brown very gravelly clay loam, neutral	Serpentine rock	Well	Moderately rapid	Medium to rapid	Moderate to high	5 to 20	1 to 3	Very low	Range Wildlife
Hj-LE-Hj	Kaydon-Los Gatos association, 15 to 75 percent slopes	Uplands											
	Kaydon		Brown gravelly loam, medium acid	Yellowish brown gravelly loam, strongly acid	Sandstone rock	Somewhat excessively	Moderately rapid	Medium to rapid	Moderate to high	5 to 20	1 to 3	Very low	Range Wildlife
	Los Gatos		Brown gravelly loam, slightly acid	Reddish brown gravelly clay loam, medium acid	Sandstone rock	Well	Moderate over mod. slow	Medium to rapid	Moderate to high	20 to 36	2 to 5	Low	Range Wildlife
Yl-Rl-W	Yoladolly-Rock land association, 15 to 75 percent slopes, eroded	Uplands											
	Yoladolly		Grayish brown gravelly loam, strongly acid	Brownish gray stony very gravelly loam, strongly acid	Bedrock	Excessive	Rapid	Rapid	Moderate to high	5 to 20	1 to 3	Low	Woodland Sage
	Rock land		Shallow soil materials and rock outcrop	Shallow soil materials and rock outcrop	Bedrock	Excessive	Rapid	Rapid	Moderate to high	--	--	Very low	Wildlife
SE-Ma-P-2	St. Mary's-Walton association, 15 to 50 percent slopes, eroded	Uplands											
	Walton		Dark grayish brown gravelly loam, medium acid	Brown gravelly loam, strongly acid	Sandstone rock	Somewhat excessively	Moderate	Medium	High	20+	2 to 6	Moderate	Woodland
	Masterson		Dark brown gravelly loam, strongly acid	Dark brown gravelly loam, strongly acid	Sandstone rock	Well	Moderately rapid	Medium	High	20+	2 to 6	Moderate	Woodland
GROUP 6 - Yr-EV	Yorville association, 15 to 50 percent slopes	Uplands	TO MODERATELY DEEP, SLOPING TO STEEP, SOMEWHAT POORLY IMAINED SOILS		ON UNSTABLE GEOLOGICAL FORMATIONS								
	Yorville		Grayish brown clay loam, neutral	Dark gray clay, mildly alkaline	Metamorphosed basic rock	Mod. well or somewhat poorly	Moderate over slow	Slow to medium	Moderate to high	20 to 36	3.5 to 9	Moderate	Range
GROUP 7 - AZ-RW	Aluvial land-Riverwash association, 15 to 50 percent slopes	Uplands											
	Alluvial land		Gravelly, sandy or cobblely, overwash material	Gravel, sand or cobble strata	Gravel or sand strata with lenses of finer materials	Excessive	Rapid	Slow	Moderate	10+	2 to 6	Low	Pasture Idle cropland
	Riverwash		Gravel or sand	Gravel, sand or cobbles	Gravel or sand or cobbles	Excessive	Rapid	Slow	High	None	1 to 2.5	Very low	Gravel Source
DL-ba	Dune-land-Beaches association	Stream beach and sand dunes											
	Dune land		Gray medium and coarse sands	Gray medium and coarse sands	None	Excessive	Very rapid	Slow	High	60+	2 to 3	Very low	Recreation Wildlife
	Beaches		Gray medium and coarse sands	Gray medium and coarse sands	None	Excessive	Very rapid	Slow	High	60+	2 to 3	Very low	Recreation Wildlife



TABLE 10

## SOIL CHARACTERISTICS AND QUALITIES

CE-77  
REV 6-66SURVEY AREA or ~~WATER~~ Mendocino County General Soil Map

Date February 1967

Prepared by L. R. Piontkowski

Sheet 2 of 3

Map Symbol	Soil Name	Position	Profile (dry)			Natural Drainage	Subsoil Perm	Runoff	Erosion Hazard	Effective Depth (inches)	AWC (inches)	Inherent Fertility	Present Land Use
			Surface Layer	Subsoil	Substratum or Parent Material								
	Jonestown		Brown loam, medium acid	Yellowish red clay loam, strongly acid	Sandstone rock	Well	Moderate to mod. slow	Slow to medium	Slight to moderate	20*	3.5 to 11	Moderate	Woodland
10-1-1	Los Oros-Jonestown association, 10 to 75 percent slopes	Uplands											
	Los Oros		Brown loam, medium acid	Yellowish brown loam, strongly acid	Sandstone rock	Well	Moderate	Medium	Moderate to high	20*	3.5 to 11	Moderate	Woodland
	Jonestown		Brown loam, medium acid	Yellowish red clay loam, strongly acid	Sandstone rock	Well	Moderate to mod. slow	Medium	Moderate to high	20*	3.5 to 11	Moderate	Woodland
10-1-2	Los Oros-Jonestown association, 10 to 75 percent slopes	Uplands											
	Los Oros		Brown loam, medium acid	Yellowish brown loam, strongly acid	Sandstone rock	Well	Moderate	Rapid	High	20*	3.5 to 11	Moderate	Woodland
	Jonestown		Brown loam, medium acid	Yellowish red clay loam, strongly acid	Sandstone rock	Well	Moderate to mod. slow	Rapid	High	20*	3.5 to 11	Moderate	Woodland
10-1-3	Los Oros-Jonestown association, 10 to 75 percent slopes, eroded	Uplands											
	Los Oros		Brown loam, medium acid	Yellowish brown loam, strongly acid	Sandstone rock	Well	Moderate	Rapid	High	20*	3.5 to 11	Moderate	Woodland
	Laughlin		Grayish brown loam, medium acid	Grayish brown loam, medium acid	Sandstone rock	Well	Moderately rapid	Rapid	High	10 to 30	2 to 4	Low	Range
	Jonestown		Brown loam, medium acid	Yellowish red clay loam, strongly acid	Sandstone rock	Well	Moderately slow	Rapid	High	20*	3.5 to 9	Moderate	Woodland
10-1-4	Laughlin-Los Oros association, 10 to 75 percent slopes	Uplands											
	Laughlin		Grayish brown loam, medium acid	Grayish brown loam, medium acid	Sandstone rock	Well	Moderately rapid	Slow to medium	Slight to moderate	20 to 30	2 to 5	Low	Range
	Los Oros		Dark brown clay loam, medium acid	Dark brown clay, slightly acid	Sandstone rock	Well	Moderately slow over slow	Slow to medium	Slight to moderate	30*	5 to 8	Moderate	Range
10-1-5	Los Oros-Jonestown association, 10 to 75 percent slopes	Uplands											
	Los Oros		Grayish brown loam, medium acid	Grayish brown loam, medium acid	Sandstone rock	Well	Moderately rapid	Medium	Moderate	20 to 30	2 to 5	Low	Range
	Jonestown		Dark brown clay loam, medium acid	Dark brown clay, slightly acid	Sandstone rock	Well	Moderately slow over slow	Medium	Moderate	30*	5 to 8	Moderate	Range
10-1-6	Laughlin-Los Oros association, 10 to 75 percent slopes	Uplands											
	Laughlin		Grayish brown loam, medium acid	Grayish brown loam, medium acid	Sandstone rock	Well	Moderately rapid	Rapid	High	20 to 30	2 to 5	Low	Range
	Los Oros		Dark brown clay loam, medium acid	Dark brown clay, slightly acid	Sandstone rock	Well	Moderately slow over slow	Rapid	High	30*	5 to 8	Moderate	Range
10-1-7	Los Oros-Jonestown association, 10 to 75 percent slopes	Alluvial fans and terraces											
	Los Oros		Brown gravelly loam, strongly acid	Brown clay loam, medium acid	Yellowish brown very gravelly sandy loam, strongly acid	Well	Moderate to mod. rapid	Slow to medium	Slight	30 to 60	5.5 to 10	Moderate	Vineyard
	Jonestown		Grayish brown gravelly sand/loam, slightly acid	Brown very gravelly coarse loamy sand, slightly acid	Yellowish brown gravelly coarse loamy sand, slightly acid	Somewhat excessive	Rapid	Slow	Slight	20 to 30	4 to 6	Moderate to low	Vineyard

M 3070 1/ Total available water holding capacity within effective soil depth





## AGRICULTURAL LAND CAPABILITY

Land capability classification, by the USDA Soil Conservation Service, Agricultural Handbook No. 210, is a grouping of soils made primarily for agricultural purposes, but is not designed for definitive classification of timber and range production potentials. Soils and climate are considered together as they influence use, management, and production.

The classification contains two general divisions: (1) land suited for cultivation and other uses and (2) land limited in use and generally not suited for cultivation. Each of these broad divisions has four classes, each designated by a roman numeral that reflects increasing hazards and limitations in land use. Class I has few or no hazards or limitations in agricultural use, whereas Class VIII has many. The classes are described below.

Capability classes are divided into subclasses that reflect the principal kinds of limitations: "e" for erosion, "w" for wetness, "s" for soil, and "c" for climate.

### LAND CAPABILITY CLASSIFICATION

#### Land Suited for Cultivation and Other Uses

- |           |   |
|-----------|---|
| Class I   | Soils in Class I have few or no limitations or hazards. They may be used safely for cultivated crops, pasture, grazing, production of forest products, recreation, or wildlife.   |
| Class II  | Soils in Class II have few limitations or hazards. Simple conservation practices are needed when cultivated. They are suited to cultivated crops, pasture, grazing, production of forest products, recreation, or wildlife.                                   |
| Class III | Soils in Class III have more limitations and hazards than those in Class II and require more difficult or complex conservation practices when cultivated. They are suited to crops, pasture, grazing, production of forest products, recreation, or wildlife. |
| Class IV  | Soils in Class IV have greater limitations and hazards than Class III and still more difficult or complex measures are needed   |

when cultivated. They are suited to cultivated crops, pasture, grazing, production of forest products, recreation, or wildlife.

Land Limited in Use; Generally not Suited for Cultivation

- Class V                Soils in Class V have little or no erosion hazard but have other limitations that prevent normal tillage for cultivated crops. They are suited to pasture, production of forest products, grazing, recreation, or wildlife.
- Class VI              Soils in Class VI have severe limitations or hazards that make them generally unsuited for cultivation. They are suited largely to pasture, grazing, production of forest products, recreation, or wildlife.
- Class VII             Soils in Class VII have very severe limitations or hazards that make them generally unsuited for cultivation. They are suited to grazing, production of forest products, recreation, or wildlife.
- Class VIII            Soils and land forms in Class VIII have limitations and hazards that prevent their use for cultivated crops, pasture, grazing, or the production of forest products. They may be used for recreation, wildlife, or water supply.

Erosion hazard describes the susceptibility of the soil to erosion by water or wind under specified conditions. In general, the risk of erosion depends upon the land slope, the texture and structure of the soil, the type and amount of vegetal cover, and the amount of runoff; slope is a dominant factor. In this report the erosion hazard is an estimate of the degree of water erosion to be expected if all of the protective vegetal cover is removed. The classes used in rating water erosion hazard for bare soil are determined by the following slope intervals:

Erosion Hazard Class (Rating)	Slope Interval (Percent)
Low	0 to 9
Moderate	9 to 30
High	30 to 50
Very High	Over 50

A brief description of each of the capability units follows:

Capability Unit IIe1 - Deep to very deep, well drained, moderately coarse to medium textured soils on gentle slopes.

The soils in this unit are deep (over 36 inches) with slight to moderate profile development and gentle slopes of 2 to 5 percent. Textures are sandy loams or loams. Roots and water penetrate these soils easily. The reaction is usually in the slightly acid range although occasionally the soils may be medium acid (pH 5.6 to 6.0). Available moisture ranges from about 6.5 inches to 8.5 inches for the 60 inch depth of soil.

Capability Unit IIe4 - Deep, well drained, gravelly soils on gentle slopes.

These soils occur on fans and low terraces and are more than 36 inches deep. Most have gravelly loam surface textures and subsoils are gravelly clay loams. Lower subsoils may be very gravelly. The soils are well drained, moderately permeable, and have total available moisture holding capacities of about 7 inches. Increased moisture capacity in the clay loam subsoils usually is offset by increased graveliness of the lower subsoils. Reaction is strongly acid (pH 5 to 6) and natural fertility is moderate. Slopes range from 2 to 9 percent and erosion may be moderate.

Capability Unit IIw1 - Very deep, well drained, moderately coarse to moderately fine textured soils on nearly level slopes that are subject to occasional overflow.

These are well drained, permeable soils that are deeper than 5 feet. On the average, damaging overflow occurs about once in 10 years. Textures are sandy loams, loams, and clay loams; and total available water capacity to a depth of 5 feet is about 7.5 to 11 inches. The soils have favorable structures and are easy to work. Reaction ranges from medium acid to neutral (pH 5.6 to 7.3).

Capability Unit IIw2 - Deep to very deep, moderately well to somewhat poorly drained, medium textured soils on nearly level to gentle slopes.

Soils of this unit have a common problem of drainage. A water table may be present within 3 to 5 feet of the surface during some years or during the late winter and early spring. Soil depths are over 36 inches and normally the subsoil or lower profile is moderately permeable to roots and water.

Surface textures range from sandy loam to light clay loams and soil reaction ranges from medium acid to slightly acid (pH 5.6 to 6.5). Total available moisture based on the drained profile ranges from 6.5 to 10.5 inches. Slopes are commonly less than 2 percent and the soils occur on flood plains.

Capability Unit IIIe3 - Moderately deep to deep, fine or medium textured soils with very slowly permeable subsoils or substrata.

These soils have loam surface textures and clay subsoils. They are underlain at depths of 12 to 36 inches by very slowly permeable sediments or by bedrock. Total available moisture capacity is about 2 to 10.5 inches and some additional slowly available moisture is extracted from the subsoils and substrata by perennial plants. Slopes range from 0 to 16 percent and some areas are wet. Erosion may be severe on areas that are unprotected over winter. Soil reaction is medium acid to very strongly acid (pH 5 to 6).

Capability Unit IIIe4 - Very deep, somewhat excessively drained coarse textured soils on nearly level to moderate slopes.

Soils in this unit include coarse textured or very gravelly soils that occur near streams. They are rapidly permeable and droughty. Some of the very gravelly soils are underlain by gravel substrata. Total available moisture is about 4 to 6 inches and ranges from about 0.8 to 1 inch per foot. Slopes may range from 0 to 9 percent. Soil reaction is neutral to slightly acid (pH 6.5 to 7.0) and the soils are naturally low in fertility.

Capability Unit IIIw5 - Very deep, fine textured, imperfectly drained soils on gentle slopes.

This unit consists of clay textured soils that are more than 20 inches deep. The soils have available moisture capacities of about 8 to 10 inches. Subsoils are slowly permeable. Surface soils are slightly acid (pH 5.1 to 6.5) and the soils are somewhat poorly drained. Slopes range from 0 to 5 percent.

Capability Unit IVe1 - Deep to moderately deep, moderately coarse to moderately fine textured, well drained, strongly sloping to moderately steep soils.

The soils of this unit consist mostly of loams and silt loams,



20 to 60 inches in depth resting on weathered, shattered, permeable bedrock of shale or sandstone material. Soils more resistant to erosion occur on slopes of 16 to 31 percent and the more erodible soils are on slopes of 9 to 16 percent. The latter are mostly relatively coarse textured soils over sandstone rock. The average water content varies from 1.25 to 2.25 inches per foot of soil. Total available moisture is about 3.5 to 11 inches. Most of the soils are strongly acid to slightly acid (pH 5.1 to 6.5) and acidity increases with depth. These are upland soils on strongly sloping to moderately steep slopes.

Capability Unit IVe3 - Shallow to moderately deep, moderately coarse or medium textured soils with very slowly permeable subsoils or substrata.

These soils have sandy loam or loam surface textures and silty clay loam subsoils. They are underlain at depths of 12 to 36 inches by very slowly permeable sediments or by bedrock. Total available moisture capacity is about 2 to 6 inches and some additional slowly available moisture is extracted from the subsoils and substrata by perennial plants. Slopes range from 0 to 16 percent and some areas are wet. Erosion may be severe on areas that are unprotected over winter. Soil reaction is medium acid to very strongly acid (pH 5 to 6).

Capability Unit IVe5 - Moderately deep to deep, moderately fine to fine textured soils on moderately steep slopes.

Soils of this capability unit are characterized by clay loam to clay textured soils on rounded hill slopes of 16 to 31 percent. Soil depths range from about 30 to 48 inches. The soils are well drained despite fine textures and roots may readily penetrate all the soil. Available water holding capacity ranges from around 5 to 8.5 inches and moisture per foot of soil is relatively high. Soil reaction ranges from medium acid to slightly acid (pH 5.6 to 6.5).

Capability Unit IVe8 - Shallow to moderately deep, moderately coarse to medium textured soils over bedrock on gently sloping moderately to steep uplands.

Soils in this capability unit are mostly loams, 15 to 30 inches deep to bedrock. These soils are well drained and the total available moisture ranges from about 2.5 to 5.0 inches. Soil reaction is slightly to medium acid (pH 5.6 to 6.5) and usually the trend is to become slightly less acid in the subsoil. Slope extremes range from 3 to

30 percent. These soils are used for range and in many places are over-grazed and consequently erosion becomes a problem.

Capability Unit VIe1 - Deep to moderately deep, moderately coarse to medium textured soils on moderately steep to steep slopes.

Soils in this capability unit range from 20 to 60 inches in depth. They are well to moderately well drained. Textures range from sandy loams to light clay loams and are moderately permeable. The average water content varies from about 1.25 to 2 inches per foot of soil. Total available moisture is about 3.5 to 10 inches. Soils more resistant to erosion occur on slopes of 31 to 51 percent, and the more erodible soils are on slopes of 16 to 31 percent. The latter may be relatively more coarse textured over sandstone rock. Erosion is the major hazard in the use of these lands. These upland soils are on moderately steep to steep slopes. Soil reaction is strongly acid to neutral (pH 5.1 to 7.0) and they become increasingly acid with increasing depth. The underlying parent materials are sandstone or shale rock.

Capability Unit VIe3 - Moderately coarse to moderately fine textured soils with slowly permeable claypan subsoils on rolling to steep slopes.

Soils in this capability unit normally have claypan or other slowly permeable subsoils at depths of 18 to 40 inches. Surface textures range from sandy loam to light clay loams and subsoils are clay textures. Most of these soils are subject to land slips because of water saturation above the clay layer during the rainy season. Total available moisture may range from 3.5 to 9 inches and slowly available moisture is supplied by the subsoil. Soil reaction ranges from strongly acid to slightly acid (pH 5.3 to 6.5) in the surface and strongly acid to basic in the subsoil. This is upland rangeland or forest land on rolling to steep slopes (15 to 50 percent). The susceptibility to land slips and gully erosion made this land generally unsuited for cultivation. Many areas of the Yorkville soils have been over-grazed but this apparently has no connection with the problem of land slips.

Capability Unit VIe5 - Moderately deep, or deep, moderately fine textured upland soils on moderately steep or steep slopes.

Soils in this unit have clay loam surface soils and usually have clay loam subsoils. They overlie sandstone or shale

bedrock at depths ranging from about 2 to 5 feet. Available moisture capacities range from about 2 to 8 inches and permeabilities are moderately slow or slow. The more erodible soils have slopes of 16 to 31 percent and the less erodible soils have slopes of 16 to 51 percent. The soils are well drained and reaction usually is strongly to slightly acid in the surface and strongly acid in the subsoil.

Capability Unit VIe8 - Shallow to moderately deep, moderately coarse to medium textured soils over bedrock on rolling to steep uplands.

Soils in this capability unit are mostly loams, 15 to 30 inches deep to bedrock. These soils are well drained and the total available moisture ranges from about 2 to 5 inches. Soil reaction is slightly to medium acid (pH 5.6 to 6.5) and usually the trend is to become slightly less acid in the subsoil. Slope extremes range from 9 to 51 percent but most of it is in the 31 to 51 percent range.

Capability Unit VIIe1 - Moderately deep to deep, medium to moderately coarse textured soils on steep to very steep slopes.

Soils in this capability unit are 20 to 60 inches in depth and rest on slowly permeable fractured bedrock. Some of the soils contain a high percentage of rock fragments throughout the profile. Internal drainage is moderate to moderately rapid. Textures range from medium to moderately coarse. Erosion hazards are moderate, due to the steep to very steep slopes. Soil reaction is usually strongly acid but ranges from pH 5.1 to 7.0 and usually becomes increasingly acid with increasing depth. Parent materials are sandstone or shale rock.

Capability Unit VIIe4 - Shallow or moderately deep, well drained upland forested soils on very steep slopes.

This unit includes well drained, stony and rocky upland soils in mountainous areas. They generally are shallow or moderately deep to bedrock. Available moisture capacity is about 2 to 6 inches and intake rates usually are rapid. Slopes range from 15 to 50 or more percent and runoff may be very rapid where the timber cover has been destroyed. Erosion may be severe. Vegetation consists of coniferous forests and brush and rates of timber growth are medium to slow. The soils are best suited to growing timber.

Capability Unit VIIe5 - Moderately deep and deep, moderately

fine textured upland soils on very steep slopes.

Soils in this unit have clay loam or clay surface soils and usually have clay loam subsoils. They overlie sandstone, shale or metamorphic bedrock at depths ranging from about 2 to 5 feet. Available moisture capacities range from about 2 to 8 inches and permeabilities are moderately slow or slow. Slopes range from 50 to 75 percent. The soils are well drained and reaction usually is medium acid (pH 5.6 to 6.0).

Capability Unit VIIe8 - Very shallow to moderately deep, moderately coarse to medium textured soils on very steep slopes.

Soils in this capability unit are mostly loams, 8 to 30 inches deep over bedrock. The soils are well to excessively drained and the total available moisture ranges from around 1.2 to 5 inches. Soil reaction is slightly to medium acid (pH 5.6 to 6.5) and the usual trend is to become slightly less acid in the subsoil. Slopes are very steep, ranging from 51 to 76 percent. This unit is very similar to capability unit VIe8 except the slopes are steeper and grazing animals have more difficulty in getting over this land. These soils are used for range.

Capability Unit VIIs4 - Well drained, rocky, stony and gravelly upland forested soils.

Most of these soils occur on relatively gentle slopes. All have low water holding capacities of about 2 to 5 inches. The soils absorb water rapidly unless the vegetation cover is destroyed. Runoff is slow and erosion is slight. Surface soil textures are rocky, gravelly, sandy loams and loams and subsoils usually are similar. Underlying bedrock is granite, basalt, metamorphic or sedimentary formations. Vegetation is coniferous forest and brush. Rate of timber growth is medium.

Capability Unit VIIs9 - Shallow, rocky, moderately fine and fine textured, moderately steep to steep upland soils on serpentine bedrock.

This unit consists of stony or rocky soils with loam textures. They are about 10 to 20 inches deep to serpentine or peridotite bedrock. The soils are well drained and have water holding capacities of about 2 to 3 inches. Slopes range from 5 to 51 percent and runoff is rapid, but erosion usually is not severe because of rock and stone on the surface. Soil



reaction is slightly acid to mildly alkaline (pH 6.5 to 7.8). These soils are used for range. Production of forage is low because of rockiness and low fertility. Vegetation consists of brush, digger pine, shrubs, and grass. Scattered annual and perennial grasses are found on these soils.

Capability Unit VIIw4 - Coarse sandy, gravelly or stony alluvial soils subject to frequent overflow, stream erosion and deposition.

The soils in this capability unit are usually coarse sands, or gravelly sands. They are often wet or subject to overflow during the winter or spring. Channel alignment or streambank protection are often necessary to protect adjacent areas.

Capability Unit VIIIe4 - Very deep, coarse textured dune land subject to wind erosion.

Soil materials in this unit consist of wind blown sand on dune land. The soil reaction varies from medium acid to mildly alkaline (pH 5.6 to 7.8). Recreation is the major use for these lands.

Capability Unit VIIIs8 - Shallow and very shallow, steep, rocky and eroded uplands.

This unit consists of rough, mountainous brush covered areas not suited for agricultural use. Slopes usually are steep but range from 10 to 75 percent. Rock outcrops are frequent, soils usually are less than 10 inches deep, and erosion is moderate or severe. Soils of this unit are used for water shed, wildlife, and recreation. Fire control and maintenance of proper cover are the most important problems in the protection of downstream lands and reservoirs and for improvement of watershed yields.

Capability Unit VIIIw4 - Very deep, very coarse, sandy, gravelly or stony soils subject to frequent overflow and deposition.

Soils in this capability unit are barren, sandy, gravelly or stony deposits in stream channels and on coastal beaches. Some areas are subject to frequent overflow and deposition. Coastal beaches are subject to constant wind and wave action. These areas are suited for recreation, wildlife, and gravel sources.





## AGRICULTURAL LANDS

In a report prepared by the Mendocino County Staff Land Use Committee, it was recommended that land classified good to superior be zoned for agriculture and be entitled to receive agricultural preserve status. This land includes prime forests, prime range and prime bottom land, and makes up three-fourths of the total land area of the County as indicated cated in Table 11.

TABLE 11  
DISTRIBUTION OF LAND ACCORDING TO  
AGRICULTURAL CHARACTERISTICS

### Good to Superior Land:

Prime Forest	1,159,000 acres	51.6%
Prime Range	415,000	18.4
Prime Bottom Land	74,541	3.3
*Unclassified	37,295	1.7
TOTAL	<u>1,685,836 acres</u>	<u>75.0%</u>

### Poor Agricultural or Forest Land:

Forest	61,000 acres	2.7%
Range	199,000	8.9
*Unclassified	81,164	3.6
TOTAL	<u>341,164 acres</u>	<u>15.2%</u>

Mendocino National Forest	<u>219,000 acres</u>	<u>9.8%</u>
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COUNTY TOTAL	2,246,000 acres	100.0%
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The Land Conservation Act (Agricultural Preserves) recognizes Classes I and II soils as prime agricultural soils. However, Mendocino County has an abundance of Classes III and IV soils which are used for, and well suited to, the raising of wine grapes and apples. A majority of the acreage devoted to the wine grape is Class III soils. For this reason, Class III soils have been included in the "prime" category as shown in Table 12.

\*Unclassified lands include valley lands which have not been rated for range production, small valleys which have not been mapped, waterways, urban areas, highways, etc.

TABLE 12  
PRIME AGRICULTURAL LAND

<u>Area</u>	<u>Class I</u>	<u>Class II</u>	<u>Class III</u>	<u>Total</u>	<u>% of Total Land Area</u>
Anderson Valley	0	2,390	1,695	4,085	.18
Coastal Plain	0	3,929	8,846	12,775	.57
Hopland Area	345	4,640	2,650	7,635	.34
Little Lake Valley	555	3,945	2,737	7,237	.32
Potter Valley	615	4,875	1,965	7,455	.33
Redwood Valley	450	3,693	3,525	7,668	.34
Round Valley	850	5,950	7,360	14,160	.63
Ukiah Valley	1,576	7,482	2,319	11,377	.51
Laytonville	73	1,268	808	2,149	.10
TOTAL	4,464	38,172	31,905	74,541	3.32

Also included in lands which are classified as conifer soils are lands which have high to medium timber producing capability. These lands amount to 1,159,000 acres, or 51.6 percent of the total land area of the County.

Prime rangelands include soils classified as grass, oak-grass, and other soils which have a high potential of producing feed. These prime rangelands comprise 416,000 acres, or 18.4 percent of the total land area.

The total acreage recommended by the Staff Land Use Committee as being entitled for Agricultural Preserve Status is 1,685,836, or 75 percent of the total land area of the County. Currently, 964,029 acres are included in Agricultural preserves.

## VEGETAL COVER TYPES

The delineations used on the Vegetal Cover Map (on hand at Mendocino County Planning Department) were developed from information from the Timber Stands and Soil-Vegetation Maps prepared by the Pacific Southwest Forest and Range Experiment Station and are defined as follows:

Coniferous forest is composed of several cover types, the most important of which are redwood, redwood-Douglas-fir, mixed conifer (mainly Douglas-fir, true firs, and sugar and ponderosa pine), and pure ponderosa pine. Respectively each lies further from the coast and each receives progressively less precipitation. Minor conifer species, such as Sitka spruce, various cypresses, Port Orford cedar, coast and mountain hemlock, lowland fir, incense cedar, canoe cedar, juniper, and Bishop and knobcone pine, are found in various locations, depending mostly upon soil-moisture relationships. Broadleaf trees, typical of which are tan oak, alder, madrone, and toyon, grow interspersed in patches throughout the conifer stands. Ferns, rhododendron, azalea, salal, thimbleberry, huckleberry, and other shrubs often form a rather luxuriant undergrowth in forests near the coast while, inland, both species and density of underbrush vary widely.

Woodland, as used here, is a collective term for broadleaf trees and includes both deciduous and evergreen species. California black oak, Oregon oak, alder, dogwood, Oregon ash, bigleaf maple, and buckeye are the most common of the deciduous species, while tan oak, live oak, madrone, bay, and toyon are the most representative of the evergreens. Typically, evergreens predominate near the coast, and in the inland mountainous zones deciduous trees are most prevalent. Poison oak, manzanita, various Ceanothus, scrub forms of various oaks, currant, raspberry, blackberry, annual grasses, and forbs form the understory.

The grass type is made up of a variety of herbaceous species, predominantly annuals. Typical herbaceous species are oat grasses, various bromes, wild barleys, fescues, wild oats, filaree, Medusahead, and burclover.

The woodland-grass type is a combination of the two types described in the immediately preceding paragraphs. In parts of the study area, mostly in the Southern Basins, much of the landscape is savannah covered by low annuals with an occasional large single tree or scattered groups of trees. California black oak and live oak are the most common trees;

vegetation in the open areas is grass and other herbaceous annuals.

The brush type, called chaparral, consists of species that range in height from three to twelve feet, generally with rigid branchlets and thorny projections. These often form dense thickets that are virtually impenetrable to all but birds and rodents. Along the coast, blueblossom Ceanothus, rhododendron, and azalea are the most common species and, in the spring, these present brilliant wildflower displays. Inland chaparral usually occupies seasonally hot sites, and typical species are manzanita, various Ceanothus, chamise, scrub deciduous and live oaks, piojon oak, baccharis, and Yerba Santa. On the more xeric timber sites, the shrub species tend to encroach on timber sites that have been burned or logged. Pure stands of a single species are common, and individual scattered digger pine occur in fringe areas that adjoin conifer or woodland types.

Cropland includes both irrigated and non-irrigated land and is located mostly in the river valleys scattered throughout the study area. The non-irrigated and much of the irrigated lands are generally used for hay production and pasture and are covered mainly by grasses. The other irrigated areas support orchards, vineyards, and grain and row crops.

The remaining land, shown in the "Other" category, is a combination of types that support little or no vegetal cover. Barren areas occur on mountain tops, rocky and sandy coastline, rock outcrops, and similar sites where soil and climate conditions limit vegetal growth. Some of the most spectacular scenery is in this category. Water-surface areas include lakes and reservoirs. Urban and industrial areas usually support considerable vegetation, but it is often different from the original natural cover.



## TIMBER PRODUCTION AND SITES

### TIMBER PRODUCTION

The timber industry developed with the settlement of California's North Coast and quickly became the most important industry and accounts for most of the income and employment. The industry prospered during the gold rush and the resultant development of the Bay Area which placed a demand on Mendocino County's lumber. In the 1860's and 1870's, Mendocino County became the leading California lumber producing County. Most of the early timber harvest was simply an exploitation of the resource with little regard for the future, and much of the land in small ownerships continues to be managed that way. Recently, some private owners, particularly those holding large acreages, have shifted to sustained yield management, similar to a type of management long used on national forest timberlands.

While timber harvests have declined since the mid-1950's, the lumber industry remains an important segment of the County's economy. In 1968, 35 percent of all employment was in the lumber industry. About 3 percent of the commercial timberland acreage is logged each year, including the harvest of sawlogs and poles and products of thinning operations. Production per acre is generally superior to other timbered areas in the State.

About 200 square miles of timberland have been converted to grass for grazing. Recently, the number of new conversions has decreased, and some previously converted acres are being allowed to revert to timber.

Of the County's 2,246,000 acre area, 1,304,000 acres, or 58 percent, is unreserved commercial forest land.

### TIMBER SITES

The inherent productive capacity of different kinds of timberland depends upon the combined effects of the soils and climate peculiar to them. The concept of the "woodland site" is used to express these differences.

Woodland sites are kinds of timberland that differ from one another in their ability to produce significantly different kinds or amounts of conifer vegetation.

The Upland Soils Map for Mendocino County, 1951, contains

several classifications of soil series depicting the soil types and depth of soil in that class. One classification, namely "Soils normally associated with commercial conifer forest types, rated generally as high and intermediate sites for conifer timber, and low and intermediate for grass." The soil series included in this classification are Butte, Comptche, Hugo, Melbourne, Josephine; sites Usal, Tatu, Mendocino, Caspar, and Empire. The extent of this soil classification generally locates the more productive timber growing areas in the County. This area totals approximately 1,159,000 acres or 51.6 percent of the total County area. A more detailed timber site location map could be made utilizing the following site descriptions as found on the Soil-Vegetation Maps, 15 minute quad series.

#### DOUGLAS-FIR SITE CLASS II

This site is capable of supporting a good growth of Douglas-fir. Redwood also does well where it is climatically adopted. This site grows 1,400 board feet per year between 30 and 80 years of age when the stand is fully stocked.

#### DOUGLAS-FIR SITE CLASS III

This site is capable of supporting a fair growth of Douglas-fir (sometimes redwood) timber. This site grows 914 board feet per acre per year between the ages of 30 and 80 when the stand is fully stocked.

#### PONDEROSA PINE SITE 2

This site will produce a stand of Ponderosa pine but the growth rate is slow. This site grows 100 board feet per acre per year between the ages of 20 and 100 when the stand is fully stocked.

#### PONDEROSA PINE SITE 5

This is a good Ponderosa pine site. This site grows 450 board feet per acre per year between the ages of 20 and 100 when the stand is fully stocked.

TABLE 13  
FOREST AREA

Commercial Forests	1,304,000 acres
Productive Reserved Forests	6,000
Unproductive Forests	<u>469,000</u>
TOTAL	1,779,000 acres

TABLE 14  
OWNERSHIP-COMMERCIAL FOREST LAND

Public:

National Forest	107,000 acres
Bureau of Land Management	44,000
Indian	13,000
State	<u>41,000</u>
TOTAL PUBLIC	205,000 acres

Private:

Forest Industry	469,000 acres
Other	<u>630,000</u>
TOTAL PRIVATE	1,099,000 acres

TOTAL	1,304,000 acres
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TABLE 15

AREA OF COMMERCIAL FOREST LAND BY  
FOREST TYPE AND OWNERSHIP CLASS

<u>Forest Type</u>	<u>All Ownerships</u>	<u>National Forest</u>	<u>Other Public</u>	<u>Forest Industry</u>	<u>Other Private</u>
Douglas-Fir	228,000	45,000	8,000	93,000	82,000
Redwood	295,000	-	28,000	160,000	107,000
True Firs	33,000	28,000	-	-	5,000
Ponderosa Pine	27,000	18,000	-	4,000	5,000
Bishop Pine	19,000	-	-	-	19,000
Lodgepole Pine	5,000	-	-	-	5,000
Incense Cedar	5,000	-	-	-	5,000
Red Alder	9,000	-	-	5,000	4,000
Calif. Black Oak	58,000	10,000	7,000	-	41,000
Oregon White Oak	50,000	1,000	-	13,000	36,000
Pacific Madrone	90,000	-	6,000	19,000	65,000
Tanoak	374,000	-	32,000	156,000	186,000
Other Hardwoods	90,000	3,000	17,000	19,000	51,000
Non-Stocked	<u>21,000</u>	<u>2,000</u>	<u>-</u>	<u>-</u>	<u>19,000</u>
TOTAL	1,304,000	107,000	98,000	469,000	630,000

## HYDROLOGY

The water resources of Mendocino County arise in and the surface runoff is disposed of through three major drainage basins having the following sizes and acre-feet of natural surface water runoff.

TABLE 16

### RUNOFF OF MENDOCINO COUNTY DRAINAGE BASINS

	<u>Coastal River Basins</u>	<u>Russian River Basin</u>	<u>Eel River Basin</u>	<u>Totals</u>
Square Miles	1,600	1,500	3,600	6,700
Acre- Feet Run- off	2,103,600	1,688,900	6,298,400	10,090,900

However, about 68 percent of the historical flow of the East Fork Russian River originates in the Upper Eel watershed and is diverted from Van Arsdale Reservoir on the Eel River, through the P. G. & E. Company's Potter Valley Tunnel and Powerhouse, and into the East Fork. The East Fork Russian River, with the diversion from the Eel, contributes about 16 percent of the total runoff from the Russian River Basin.

Since 1958, the total runoff of the East Fork has been controlled by Coyote Dam and Lake Mendocino. The upper reaches of the main stem of the Eel River are stored in P. G. & E.'s Lake Pillsbury which has 86,000 acre-feet of usable storage capacity. This P. G. & E. facility diverts 140,000 acre-feet annually into the Russian River Basin for power and irrigation purposes.

The surface water quality of each of the three river basins is generally good to excellent, characterized by low concentrations of total dissolved minerals, boron, and calcium-magnesium carbonates. Boron occurs in harmful concentrations in certain local drainage areas overlying fault zones in the older Franciscan formation. These zones transmit boron and other chemicals in hot solutions.



The ground water resources of the County occur in three principal types of aquifers present in the coastal terraces and valleys and in the inland valley alluvium, older terraces, and the ancient Franciscan formation. Here are the groundwater storage capacities of the combined water-bearing units of the Coastal, Russian, and Eel River Basins.

TABLE 17

WATER RESOURCES OF MENDOCINO COUNTY DRAINAGE BASINS

	<u>Coastal Basins</u>	<u>Russian River Basin</u>	<u>Eel River Basin</u>	<u>Total</u>
Area (Acres)	53,500	11,500	105,000	170,000
Usable Capacity (Ac.-Feet)	217,000	64,000	342,600	623,600

Groundwater quality and yield of wells are much more variable than in the case of surface waters due mainly to the variable thickness, porosity, specific yield, and mineral constituents of the aquifer. The vast majority of wells recorded with the State are very low producers except in the younger alluvium adjacent to and underlying the stream and river channels. In a few places such as Round Valley, ground water occurs under artesian pressures. And in many alluvial aquifers, the supply of ground water varies seasonably according to the rainfall and runoff conditions.

The existing water projects in the County consist of some 300 surface water diversions, nine small dams and reservoirs, Lake Mendocino of 122,500 AF capacity, and many small stock watering ponds. The diversions are listed here by basins:

TABLE 18

WATER DIVERSIONS BY MENDOCINO COUNTY DRAINAGE BASINS

<u>Basin</u>	<u>Number of Diversions</u>	<u>Quantity Diverted</u>
Coastal	110	50,000 AF/Year
Russian	140	6,000 AF/Year
Eel	60	170,000 AF/Year

The number of ground water wells probably exceeds 4,000, but many are not recorded with the State. They are estimated to withdraw some 5,000 acre-feet per year.

There are quite a large number of water service agencies in the County. These are listed below along with the service area, acres of irrigated cropland, and number of urban service connections.

TABLE 19  
WATER AND SEWER SERVICE  
AGENCIES  
IN MENDOCINO COUNTY

<u>Name of Water Agency</u>	<u>Service Area</u>	<u>Acres of Irrigated Cropland</u>	<u>Number of Urban Services</u>
<u>Municipal Water- Works</u>			
Fort Bragg Municipi- pal Water Dept.	Ft. Bragg		1,800
Ukiah Municipal Water Dept.	Ukiah		3,331
<u>Commercial Water Companies</u>			
Brown's Water Works	Albion		22
Laytonville Water Co.	Laytonville		100
North Gualala Water Co.	Gualala		225
Pacific Gas & Electric Co.	Willits		1,560
Point Arena Water Works	Point Arena		137
Rogina Water Company	Talmage	4	520
<u>Incorporated Mutual Water Companies</u>			
Dos Rios Mutual Water Corp.	Dos Rios		23

TABLE 19 - Continued

<u>Name of Water Agency</u>	<u>Service Area</u>	<u>Acres of Irrigated Cropland</u>	<u>Number of Urban Services</u>
<u>County Water Districts</u>			
Calpella County Water District	Calpella		71
Elk County Water District	Elk		65
Laytonville County Water Dist.	Laytonville		Inactive
Leggett County Water District	Leggett		Inactive
Redwood Valley Co. Water Dist.	Redwood Valley		-
Little Lake Co. Water District	Willits		-
Round Valley Co. Water District	Covelo		Inactive
Millview County Water District	Ukiah		535
Willow County Water District	Ukiah		655
<u>County Water Works Districts</u>			
Mendocino County Waterworks Dist.2	Anchor Bay		26
<u>Flood Control &amp; Water Conservation Districts</u>			
Mendocino County Flood Control and Water Conservation District	Ukiah	12,558	
<u>Irrigation Districts</u>			
Potter Valley Irrig. Dist.	Potter Valley	1,500	

TABLE 19 - Continued

<u>Name of Water Agency</u>	<u>Service Area</u>	<u>Acres of Irrigated Cropland</u>	<u>Number of Urban Services</u>
<u>Public Utility Districts</u>			
Hopland Public Utility Dist.	Hopland		150
<u>Miscellaneous Water Service Agencies</u>			
Brooktrails Resort Improvement Dist.	Brooktrails		35
Pacific Reefs Water District	Albion		-
Anderson Valley Community Services Dist.	Boonville & Philo		-
Irish Beach Water Dist.	Irish Beach		9
City of Fort Bragg	Fort Bragg		1,500
City of Point Arena	Point Arena		160
City of Ukiah	Ukiah		2,750
City of Willits	Willits		1,400
Calpella County Water Dist.	Calpella		-1
Covelo Community Services Dist.	Covelo		110
Ukiah Valley Sanitation Dist.	Ukiah		1,000
County Services Area No. 2	Rogina Heights & Talmage		-
Anderson Valley Community Ser- vices Dist.	Boonville & Philo		-
Mendocino State Hospital	Talmage		-





## FISH AND WILDLIFE

### FISH

The lakes, rivers, and streams of Mendocino County abound with a variety of game and non-game fishes. These include, but are not limited to, king salmon, silver salmon, steelhead, shad, sturgeon, lamprey eel, rainbow trout, brown trout, large and small mouth black bass, crappie, green sunfish, bluegill, striped bass, carp, hitch, suckers, and squafish.

King salmon, silver salmon, and steelhead are the most sought after and most valuable game fish. Their use is an essential part of the recreation and commercial fishery industries. The income from these sources is exceeded only by lumbering and agriculture. Clean, coarse gravels are essential for reproduction of these fish. This is a resource that is plentiful in all three major drainage basins of the County under present undeveloped conditions.

Mendocino County has approximately 954; 1,352; and 2,425 miles of habitat used by king salmon, silver salmon, and steelhead, respectively. King salmon are found throughout the main stream and larger tributaries of the Eel River, as well as the Russian River. Silver salmon are distributed throughout a large portion of the Eel River System, as well as the Russian River. They inhabit numerous smaller coastal streams. Steelhead inhabit almost every stream in the County. The following is a summary of king salmon, silver salmon, and steelhead population sizes and habitat in the larger drainage basins of the County,

### EEL RIVER BASIN

The Eel River has a very large annual runoff and is one of California's most important anadromous fish streams. It ranks second in silver salmon and steelhead production, third in king salmon production. It has an estimated annual average run of 69,000 king salmon, 30,000 silver salmon, and 115,000 steelhead.

There are 802 miles of king salmon, 894 miles of silver salmon, and 1,269 miles of steelhead habitat in the entire Eel River drainage. Of the California coastal river systems, the Eel ranks first in amount of silver salmon habitat and second in amount of king salmon and steelhead habitat.

Problems which have damaged the river system and have diminished fish runs center around improper logging practices. Diversion of waters to the Russian River and construction of the Scott Dam have also caused reduced fish runs.

A fish ladder and counting and propagation facility are maintained at Cape Horn Dam.

#### RUSSIAN RIVER BASIN

The Russian River drains about 1,500 square miles of watershed lands. Steelhead are the most important sport fish in the river and are distributed throughout the main tributaries. The river system has 102 miles of king salmon, 155 miles of silver salmon, and 661 miles of steelhead habitat. The river ranks third in California in steelhead production. An average of 50,000 steelhead, 5,000 silver salmon, and 500 king salmon are said to spawn annually in the system.

Problems along the river are not as great as other river systems. However, potential damage is ever present due to channelization, over-grazing, poor land practices, and a growing suburban population.

#### COASTAL RIVER BASINS

Ten Mile River enters the ocean about nine miles north of Fort Bragg. There are 103 miles of silver salmon and steelhead habitat in the drainage system, having an annual spawn of some 6,000 silver salmon and 9,000 steelhead.

The Noyo River drains about 100 square miles and enters the ocean at Fort Bragg. There are 83 miles of silver salmon and steelhead habitat in the drainage system. Some 6,000 silver salmon, 8,000 steelhead, and less than 50 king salmon use the drainage annually.

Big River empties into the ocean eight miles south of Fort Bragg. It has 101 miles of silver salmon and 157 miles of steelhead habitat and an estimated run of 6,000 silver salmon and 12,000 steelhead.

The Navarro River drains an area of about 500 square mile with four tributaries: the North Fork, Rancheria, Anderson, and Indian Creeks. There are 170 miles of silver salmon and 185 miles of steelhead habitat in the drainage. Some 7,000 silver salmon and 16,000 steelhead spawn annually in the drainage system.

The Garcia River system drains 100 square miles and enters the ocean near Point Arena. It has 38 miles of silver salmon and 41 miles of steelhead habitat and 2,000 silver salmon and 4,000 steelhead spawn annually in this drainage.

In all of the above mentioned river systems, severe damage has resulted from poor logging practices.

Mendocino County, one of the largest and least populated coastal counties, provides a great opportunity for sport fishing. The Eel River supports the second largest sport fishery in Northwestern California, exceeded only by the Klamath-Trinity River system. Fishing for king salmon and steelhead is best during the fall and early winter. The Middle Fork provides a good summer and early fall fishery for spring; summer and fall run steelhead. The South Fork receives most of the angling pressure in the drainage. Anglers concentrate at numerous access points along the stream up to Benbow Dam.

Some 8,600 and 32,200 angler-days per year are spent fishing for salmon and steelhead, respectively, in the Eel River drainage. Approximately 26 percent of its king salmon, 25 percent of its silver salmon, and 23 percent of its steelhead habitat are accessible to the angler.

Little is known about the Russian River sport fishery despite its importance as a sport fishing river. It is estimated that approximately 70,000 angler days per year are spent fishing for salmon and steelhead.

The salmon and steelhead that use the streams in Mendocino County spend a majority of their lives in the ocean. Most of the salmon catch is at sea; however, very few steelhead are caught in the ocean. The marine salmon catch is both commercial and sport. Ocean fishing activities are centered at Fort Bragg, although fishing is done along the Mendocino Coast from landings at Shelter Cove, Albion, and Point Arena. The average commercial salmon catch from 1959 through 1965 at these landings was 1,094,805 pounds with an average value of \$553,557. The average annual salmon sport catch at these landings was 6,800 fish. Other species commonly landed are sole, tuna, rock fish, and crab, as shown in Table 20.

Wildlife habitat in the County falls into four major classifications:

1. The redwood belt extends along the coast in a strip

TABLE 20  
AVERAGE ANNUAL COMMERCIAL LANDINGS  
1959-1963

Dover Sole	1,298,000 lbs.
Salmon	1,095,000
Albacore Tuna	918,000
Rock Fish	667,000
Crab	436,000
TOTAL	<u>4,414,000 lbs.</u>

about 35 miles wide, ranging in elevation from sea level to 2,000 feet. Redwoods are found in association with Douglas fir, except on valley flats where the redwood stands are essentially pure.

2. The Douglas fir forest is located inland and at elevations above the redwood belt but below 4,500 feet. Douglas fir is also common in places near the coast where it is in association with redwoods and tanbark oak.
3. Ponderosa pine forests are scattered at higher elevations from the crest of the Coast Range eastward. Other conifers of the pine forest are red and white fir.
4. The woodland grass association is found interior at elevations generally below or intermixed with the Ponderosa pine forests.
5. Chaparral occupies much of the foothills. Chaparral includes chamois, buck brush, western mountain mahogany, scrub oak, and species of manzanita.

Wildlife species are grouped into five categories so as to relate them to their habitats, namely, big game, upland game, furbearers and predators, waterfowl, and other wildlife.

1. Big Game - The Columbian black-tailed deer is the most abundant big game animal in Mendocino County. Deer and deer herds are non-migratory and use the same ranges all year. Migrations occur between the higher summer ranges and the lower winter ranges.

Winter deer ranges are located along streams below the 4,000 foot level in glade areas. Reduction of these narrow strips is a threat to migratory deer.

While deer do create serious problems in the agricultural areas by their night feedings on crops, they do act as a stimulus to the attraction of hunters. Hunting clubs have been established through the County. Mendocino is a lead County in numbers of deer taken.

2. Upland Game - Blue grouse inhabit the Douglas fir forests. California quail are widespread, preferring brushy stream bottoms and cut-over areas of the Eel River Basin.

The County is a good quail producing area, but quail hunting is limited by posting of private lands and by lack of vegetative cover. Small populations of ring-necked pheasants inhabit Round Valley. Band-tailed pigeons are widely distributed throughout the area. They inhabit the Ponderosa pine and oak association in the mountains.

Mourning doves occur in the woodland grassland areas except at the higher elevations and in the coastal belt. They tend to concentrate in the Round Valley-Covelo area.

3. Furbearers and Predators - The County supports a variety of furbearers. Mink and muskrat are the more commercially important ones. Ring-tailed cats, gray foxes, coyotes, and bobcats are present in variable numbers but are lightly harvested. Martens, otters, and king fish are found in small numbers. Raccoons, weasels, badgers, spotted skunks, and striped skunks are common.
4. Waterfowl - A variety of waterfowl are attracted to the County by the many rivers, streams, lakes, and ponds.
5. Other Wildlife - Sea lions and seals are common along the coast and even whales are seen at certain times of the year. Islands and large rocks are inhabited or visited by harbor seals, sea lions, and several species of birds including puffins, gulls, auklets, murres, murrelets, albatross, shearwaters, petrels, pelicans, and cormorants.

A variety of habitats attract a diversity of non-game birds, including the brown pelican, southern brown



eagle (both are endangered species), paragon falcon, osprey, pileated wood peckers, and a heron rookery exists near the mouth of the Russian River. Wild turkeys, while not native to the area, have been released in the Cloverdale area and are present in small numbers. Wild turkeys also exist in the northern portion of the County.

TABLE 12

## MENDOCINO COUNTY WILDLIFE RESOURCES

WILDLIFE HABITAT		WILDLIFE USE	
<u>Habitat Description</u>	<u>Amount (Acres)</u>	<u>Species</u>	<u>Average Annual Hunter Days</u>
Pine-fir-chaparral	200,000	Deer	111,725
Agriculture	35,795	Black Bear	450
Grassland	297,425	Quail	7,800
Chaparral	163,000	Pheasant	800
Woodland-grass	239,020	Pigeons	8,700
Coastal forest	339,150	Rabbits	500
Woodland-chaparral	99,000	Doves	3,900
Urban-industrial	9,500	Squirrels	8,750
Barren	22,300	Ducks	3,300
Lakes-bays-reservoirs	5,960	Geese	50
Hardwood	133,000	Furbearers	1,500
Riparian	400	Non-game Species	10,000
Minor Conifers	<u>31,000</u>		-----
TOTALS	1,575,550		157,475



## RARE AND ENDANGERED SPECIES

The California Fish and Game Commission has declared a number of animals to be either rare or endangered. The following species have been found within Mendocino County or its off-shore waters:

### Endangered:

California Brown Pelican - *Pelecanus occidentalis californicus*

Southern Bald Eagle - *Haliaeetus leucocephalus leucociphalus*

American Peregrine Falcon - *Falco peregrinus anatum*

Blue Whale - *Balaenoptera musculus*

Humpback Whale - *Megaptera novaengliae*

Pacific Right Whale - *Balaena glacialis japonica*

California Clapper Rail - *Rallus longirostris obsoletus*

### Rare:

California Yellow-Billed Cuckoo - *Coccyzus americanus occidentalis*

Gray Whale - *Eschrichtius gibbosus*

The following is a list of fish and wildlife species which are found in Mendocino County. The common name is followed by the scientific name:

### A. BIG GAME

1. Columbian Black-tailed Deer - *Odocoileus hemionus columbianus*

2. Roosevelt Elk - *Cervus canadensis roosevelti*

3. Northwestern Black Bear - *Euarctos americanus altifrontalis*

4. Mountain Lio - *Felis concolor*

5. Feral Pig

B. UPLAND GAME

1. Ring-necked Pheasant - *Phasianus colchicus*
2. California Quail - *Lophortyx californicus*
3. Mountain Quail - *Oreortyx pictus*
4. Blue Grouse - *Dendragapus obscurus*
5. Turkey - *Meleagris gallopavo*
6. Band-tailed Pigeon - *Columba fasciata*
7. Mourning Dove - *Zenaidura macroura*
8. Black-tailed Jackrabbie - *Lepus californicus*
9. Brush Rabbit - *Sylvilagus bachmani*
10. Western Gray Squirrel - *Sciurus griseus*
11. Douglas Squirrel - *Tamiasciurus douglasii*
12. Chickaree - *Sciurus hudsonicus*
13. Valley Quail - *Lophopus crystallinus*

C. FURBEARERS

1. Mink - *Mustela vison*
2. Muskrat - *Ondatra zibethica*
3. Ringtail Cat - *Bassariscus astutus*
4. Gray Fox - *Urocyon cinereoergenteus*
5. Coyote - *Canis latrans*
6. Bobcat - *Lynx rufus*
7. Pine Marten - *Martes caurina*
8. Raccoon - *Urocyon lotor*
9. Weasel - *Mustela frenata*
10. Badger - *Taxidea taxus*



11. Spotted Skunk - *Spilogale gracilis*
12. Striped Skunk - *Mephitis mephitis*
13. River Otter - *Lutra canadensis*

D. WATERFOWL

1. Western Canada Goose - *Branta canadensis occidentalis*
2. Green-winged Teal - *Anas carolinensis*
3. Mallard - *Anas platyrhynchos*
4. Gadwall - *Anas strepera*
5. Widgeon - *Mareca americana*
6. Shoveler - *Spatula clypeata*
7. Wood Duck - *Aix sponsa*
8. Redhead - *Aythya americana*
9. Ring-necked Duck - *Aythya valisineria*
10. Lesser Scaup - *Aythya affinis*
11. Greater Scaup - *Aythya marila*
12. American Golden-eye - *Bucephalia clangula americana*
13. Barrow's Golden-eye - *Bucephala islandica*
14. Buffle-head - *Bucephala albeola*
15. American Scoter - *Oidemia miger americana*
16. Ruddy Duck - *Oxyura jamaicensis rubida*
17. White-winged Scoter - *Melanitta deglandi dixonii*
18. Surf Scoter - *Melanitta perspicillata*
19. Hooded Merganser - *Lophodytes cucullatus*
20. American Merganser - *Mergus merganser americanus*
21. Red-breasted Merganser - *Mergus serrator*

22. Coot - *Fulica americana*
23. Pintail - *Anas acuta*
24. Scaup - *Aythya affinis*

E. FISH

1. Silver Salmon - *Oncorhynchus kisutch*
2. King Salmon - *Oncorhynchus tshawytscha*
3. Steelhead Salmon - *Gairdnerii gairdnerii*
4. Striped Bass - *Roccus saxatilis*
5. American Shad - *Alosa sapidissima*
6. White Sturgeon - *Acipenser transmontanus*
7. Green Sturgeon - *Acipenser medirostris*
8. Largemouth Bass - *Micropterus salmoides*
9. Smallmouth Bass - *Micropterus dolomieu*
10. Bluegill - *Lepomis macrochirus*
11. Green Sunfish - *Lepomis cyanellus*
12. Black Crappie - *Pomoxis nigromaculatus*
13. White Crappie - *Pomoxis annularis*
14. Channel Catfish - *Ictalurus punctatus*
15. Rainbow Trout - *Salmo gairdnerii*
16. Hardhead - *Mylopharodon conocephalus*
17. White Catfish - *Ictalurus catus*
18. Brown Bullhead - *Ictalurus nebulosus*
19. Carp - *Cyprinus carpio*
20. Hitch - *Lavinia exilicauda*
21. Sacramento Squawfish - *Ptychocheilus grandis*

22. Splittail - *Pogonichthys macrolepidotus*
23. Venus Roach - *Hesperoleucus navarroensis*
24. Gualala Roach - *Hesperoleucus parvipinnis*
25. Mosquitofish - *Gambusia affinis*
26. Tule Perch - *Hysterocarpus traskii*
27. Riffle Sculpin - *Cottus gulosus* .
28. Dover Sole - *Heterosomata symphurus*
29. Albacore Tuna - *Thunnus alalunga*
30. Blue Rockfish - *Sebastes mystinus*
31. Crab
32. Cabezon - *Scorpaenichthys marmoratus*
33. Smelt - *Osmerus moradax*
34. Lincod - *Ophiodon elongatus*
35. Surf Perch - *Embiotocidae*
36. Abalone - *Haliotis*
37. Flatfish - *Heterosomato*
38. Sanddab - *Citharichthys sordidus*
39. California Halibut - *Paralichthys californicus*
40. Giant Sea Bass - *Stereolepis gigas*
41. Kelp Bass - *Paralabrax clathratus*
42. Ocean Whitefish - *Caulolatilus princeps*
43. Sablefish - *Anaplopoma fimbria*



## PARKS AND RECREATION

### SHORELINE

Mendocino County's shoreline is 132.0 miles long. Of this ocean frontage, 13.25 miles are publicly owned.

Existing State Beaches:	Ocean Frontage
Mac Kerricher	3.89 miles
Manchester	2.25
Russian Gulch	1.45
Van Damme	0.52
Westport-Union Landing	3.28
TOTAL - STATE	<u>11.19 miles</u>

### Existing County Beaches:

Hemingway	0.23 mile
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### Wildlife Conservation Board Access Areas:

Hesser Drive	1.50 miles
South Kibesillah	0.55
TOTAL PUBLIC BEACH FRONTAGE	<u>13.25 miles</u>

In addition to the above, the "California Coastline Preservation and Recreation Plan" (1971) recommends the following acquisitions:

Ten Mile River State Park	4.50 miles
Point Arena State Park	3.70
Mendocino Coast State Park	6.20
TOTAL - PROPOSED	<u>14.40 miles</u>

If acquired, these new additions would bring shoreline frontage owned by the State to a total of 25.59 miles and would increase the total public beach frontage to 27.65 miles.

Of the shoreline frontage, 80 miles are rocky shores and headlands and 52 miles are sandy beach.



TABLE 22  
STATE PARKS

<u>Park Name</u>	<u>Acreage</u>	<u>Water* Frontage</u>	<u>Camping Units</u>	<u>Picnicking Units</u>
Hendy Woods State Park	604.7	16,300-R	92	25
Indian Creek State Reserve	15.1	-	-	2
Mac Kerricher State Park	285.7	20,487-0	143	12
Mailliard Redwoods State Reserve	242.0	-	-	1
Manchester State Beach	650.5	11,870-0	50	5
Montgomery Woods State Reserve	918.6	-	-	-
Paul M. Denimick Campground	11.8	2,350-R	28	6
Russian Gulch State Park	1,162.0	7,630-0	35	14
Van Damme State Park	1,109.9	1,700-0	79	9
Westport-Union Landing State Beach	31.5	17,310-0	-	-
Adm. Wm. Standley State Rec. Area	45.2	3,200-R	-	2
Reynolds Campground	375.0	9,000-R	50	-
Smithe Redwoods State Reserve	462.2	4,240-R		-
Standish-Hickey State Rec. Area	915.4	9,210-R	162	8
TOTAL	6,829.6	-	639	84

The State Department of Parks and Recreation reported a total visitor attendance of 771,551 for fiscal year 1970-71 to Mendocino County State Parks.

\*R = River frontage) Frontage given in feet.  
0 = Ocean frontage)

Two marine preserves have been proposed for the Mendocino Coast: Laguna Point and Point Cabrillo.

#### GOLF COURSES

Little River Inn Country Club (Little River)	18 holes
Ukiah Municipal Golf Course (Ukiah)	18 holes
Brooktrails Golf Course (Willits)	9 holes

#### OTHER FACILITIES

A variety of other historical, cultural, and recreational attractions exist in Mendocino County, including:

- Squaw Rock Historical Monument
- The Skunks (California Western Railroad)
- Fort Bragg Historical Monument
- Round Valley Historical Monument
- Mendocino Coast Botanical Garden
- Mendocino Art Center

#### FORESTS

Mendocino National Forest	219,000 acres
Jackson State Forest	51,225 acres

#### BLM LANDS

The Bureau of Land Management maintains lands within Mendocino County for the purposes of preserving hunting and fishing access, to secure more favorable conditions for waterflow, and to provide recreational facilities. The most notable BLM facility is the Cow Mountain Resource Area.

#### COW MOUNTAIN RESOURCE AREA\*:

Private Ownership	37,560 acres
Public Ownership	
United States	23,230
State	6,640
Total Acreage	67,430 acres

Four recreation areas are maintained by the BLM with the Cow Mountain Area:

Mayacmas, Willow Creek, Red Mountain, and Sheldon Creek. Facilities in these areas include camping and picnicking units, restrooms, and water.

Other BLM lands are scattered throughout the County and amount to 109,935 acres, bringing the total land ownership by BLM in Mendocino County to 133,165 acres.

#### LAKE MENDOCINO:

The United States Corps of Engineers operates Coyote Dam and its reservoir, Lake Mendocino, and maintains a number of recreation facilities. Acreage under Federal ownership includes:

Water Surface	1,700 acres
Land	2,200
Total	<u>3,900 acres</u>

Facilities include two boat launching ramps, camping and picnicking units, boat slips, and restrooms. It was estimated that 1.5 million people used the facilities last year (1972) and indications are that this usage will continue to become more intense.

\*The Cow Mountain Resource Area is within both Mendocino and Lake Counties. Acreage figures above are for Mendocino portion only.

TABLE 23  
COUNTY PARKS

<u>Name of Site</u>	<u>Acre- age</u>	<u>Picnick- ing</u>	<u>Tennis</u>	<u>Hik- ing</u>	<u>Swim- ming</u>	<u>Group Camp- ing</u>	<u>Fish- ing</u>	<u>Rest- rooms</u>
Faulkner	40	x						x
Indian Creek	15	x						x
Low Gap	80	x	x	x				x
Mill Creek	400	x		x	x	x		x
McKee - Linear Parkway	-						x	x

In addition to the above, the County provides sanitation stops at Westport, Seaside Beach, and Big River.

Other park sites which are not owned, but are maintained by the County, include:

<u>Name of Site</u>	<u>Ownership</u>	<u>Comments</u>
South Kibesillah	State	6 acre-picnicking and fishing
Hesser Drive	State	10 acre-picnicking and fishing
Oak Flat	State	Picnic grounds
Little Squaw Rock	State	Picnic grounds
Commisky Station Road	State	Picnic grounds
Navarro River	Private	Beach access





## SCENIC HIGHWAYS

The "Master Plan of State Highways Eligible for Official Scenic Highway Designation" designates two potential scenic highway routes within Mendocino County:

1. State Route 1 from the Sonoma-Mendocino County line to the junction with U. S. 101 and U. S. 101 north to the County line.
2. State Route 20.

The State Plan, however, leaves a great deal of the initiative and authority to actually implement the plan to local agencies. Recent State legislation requires local governmental agencies to include a Scenic Highways Element in their General Plans. Mendocino County has the opportunity to develop such an element which goes beyond the State Plan in scenic route designation as well as providing an active implementation program.

Some potential scenic highways within the County include:

State Route 1	105 miles
State Route 128	52
U. S. 101	106
State Route 20 (Willits to Fort Bragg)	34
State Route 20 (Calpella to County line)	11
State Route 175 (Hopland Road)	9
State Route 253 (Boonville Road)	19
Mountain House Road	9
Eureka Hill Road (including Ten Mile, Iverson and Old Stage Roads)	17
Potter Valley Road (to Van Arsdale Resv.)	12
East Side Road	15
Philo-Greenwood Road	18
Flynn Creek Road	8
State Route 261 (Longvale to Covelo)	29
Branscomb Road	13
Total	<u>457 miles</u>



## AIRPORTS

Five utility airports exist within the County; two are municipal and three are County-owned.

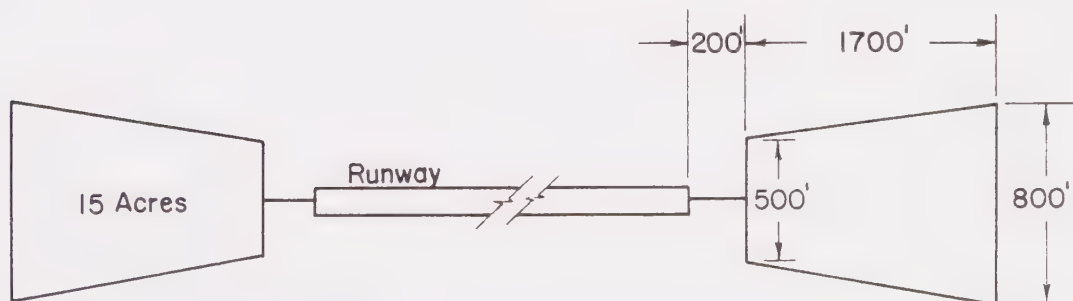
TABLE 24

### AIRPORTS IN MENDOCINO COUNTY

<u>Airport Name</u>	<u>Acreage</u>	<u>Runway Length</u>	<u>No. Based Aircraft</u>
Boonville County	24	3,300 feet	5
Ukiah Municipal	160	5,000 feet	61
Mendocino County	658	5,250 feet	10
Willits Municipal	-	3,000 feet	9
Round Valley County	115	3,400 feet	5

The Federal Aviation Administration (FAA) recommends clear zones at the ends of runways. The size of the clear zone depends upon the use of the airport and the size of the runway. For utility and larger than utility runways, the size ranges from 8 acres to 79 acres.

The clear zones for a typical utility runway are illustrated below:





## FAULTS AND HAZARDS

A number of known faults exist within the County. The most notable faults are the San Andreas, which enters the County from the sea just north of Manchester and runs south paralleling the coast approximately five miles inland, and the Healdsburg fault which begins in Boonville and runs southeasterly into Sonoma County.

Tsunami areas are areas along the coast which are subject to wave action which is the result of submarine earth movements or volcanic eruptions. Two low coastal areas along the Mendocino coast have been identified as potential tsunami hazard areas:

1. In the northern portion of the County from just south of Rockport to Inglenook.
2. In the southern portion of the County from Malto Pass Creek (just north of Manchester State Beach) to Steens Landing.

A flood plain exists along the Russian River from Lake Mendocino south. However, Coyote Dam has been effective to date in preventing major loss to property during peak rainy seasons.





## CULTURAL RESOURCES

Mendocino County is rich in cultural resources. While certain areas of the County are very familiar to historians and archaeologists, many parts remain unknown. A comprehensive inventory, obtained through research and survey, is needed.

As defined by the California State Archaeological Task Force (Moratto, 1973), an archaeological site is, "any mound, midden, settlement location, burial ground, mine, trail, rock art or any other location containing evidence of human activities which took place before 1750 A.D." In Mendocino County, about 1,500 such archaeological sites have been recorded. Files may be found at U. C. Berkeley (790 site records), U.C.L.A. (238 site records), and the California Department of Parks and Recreation in Sacramento (616 site records); some records are duplicates. Others are recorded at various small institutions such as Santa Rosa Junior College and with responsible avocational archaeologists. The Mendocino County Museum will also have copies of the site records in the near future for County reference.

Primarily because of Federally funded surveys in connection with reservoir planning, some sizeable portions of Mendocino County have been systematically surveyed by professional archaeologists. Accordingly, known archaeological sites concentrate in the following areas (King, 1973):

Round Valley - Hulls Valley - Williams Valley Etsel Flat - Eden Valley - Upper Middle Fork, Eel River (High Dos Rios Dam area and adjacent)....ca.	1,000 sites
South Eel River (English Ride Reservoir area)....ca.	19 sites
North Redwood Valley.....ca.	20 sites
Forsythe Creek.....ca.	20 sites
Coast (primarily north of Fort Bragg).....ca.	150 sites
Miscellaneous scattered reports.....ca.	300 sites

The 1,500 archaeological sites recorded in Mendocino County are believed to represent between 10 percent and 20 percent of the total number that ever existed there (King, 1973). Of the original figure, approximately 25 percent (Moratto, 1973) have been destroyed by agriculture, logging, and forestry practices, road, reservoir and urban construction,

vandalism, and natural causes. Compared to other California counties, Mendocino is relatively undisturbed.

An historical site may be defined as "any structure, place or feature which is or may be significant in the State's post 1542 A.D. history, architecture or culture." California's Archaeological Task Force further states: "Historic sites established prior to 1750 A.D. are also, concomitantly, archaeological sites." The historical sites of Mendocino County, by this definition, are numerous. Records of early stage or railroad stops, logging ports, chapels or homesteads may be found on old maps, inside written histories or locked in the memories of old timers. No systematic evaluation of the historical resources has been complete; no comparative figures are available.

### CONCLUSIONS

The entire County of Mendocino has never been systematically searched for cultural resources. An "Inventory Committee", proposed by the County Board of Supervisors is being formed by the Mendocino County Museum staff to gather any information available through research. Some resources, however, may only be located by ground surveys. Then the valuable cultural resources of prehistory and history may be protected.

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SMITH'S REDWOODS RESERVE

STANDISH HICKEY PARK

SOUTH FORK EEL RIVER

WESTPORT UNION LANDING BEACH

MACKERRICH PARK

RUSSIAN GULCH PARK

VAN DAMME BEACH PARK

MANCHESTER BEACH

POINT ARENA

GUALALA

NORTH FORK EEL RIVER

MIDDLE FORK EEL RIVER

ROUND VALLEY

INDIAN RESERVATION

COVELLO

MENDOCINO

NATIONAL FOREST

STATE GAME REFUGE

LAYTONVILLE

ADM. WM. H. STANBLY PARK

MIDDLE FORK EEL RIVER

BLM LANDS

BLM LANDS

WILLETS

BLM LANDS

MONTGOMERY WOODS RESERVE

RUSSIAN

OKIAH

RUSSIAN RIVER

COW MOUNTAIN BLM LANDS

PAUL M. DIMMICK WAYSIDE CAMP

BLM LANDS

HENDY WOODS PARK

INDIAN CREEK RESERVE

BOONVILLE

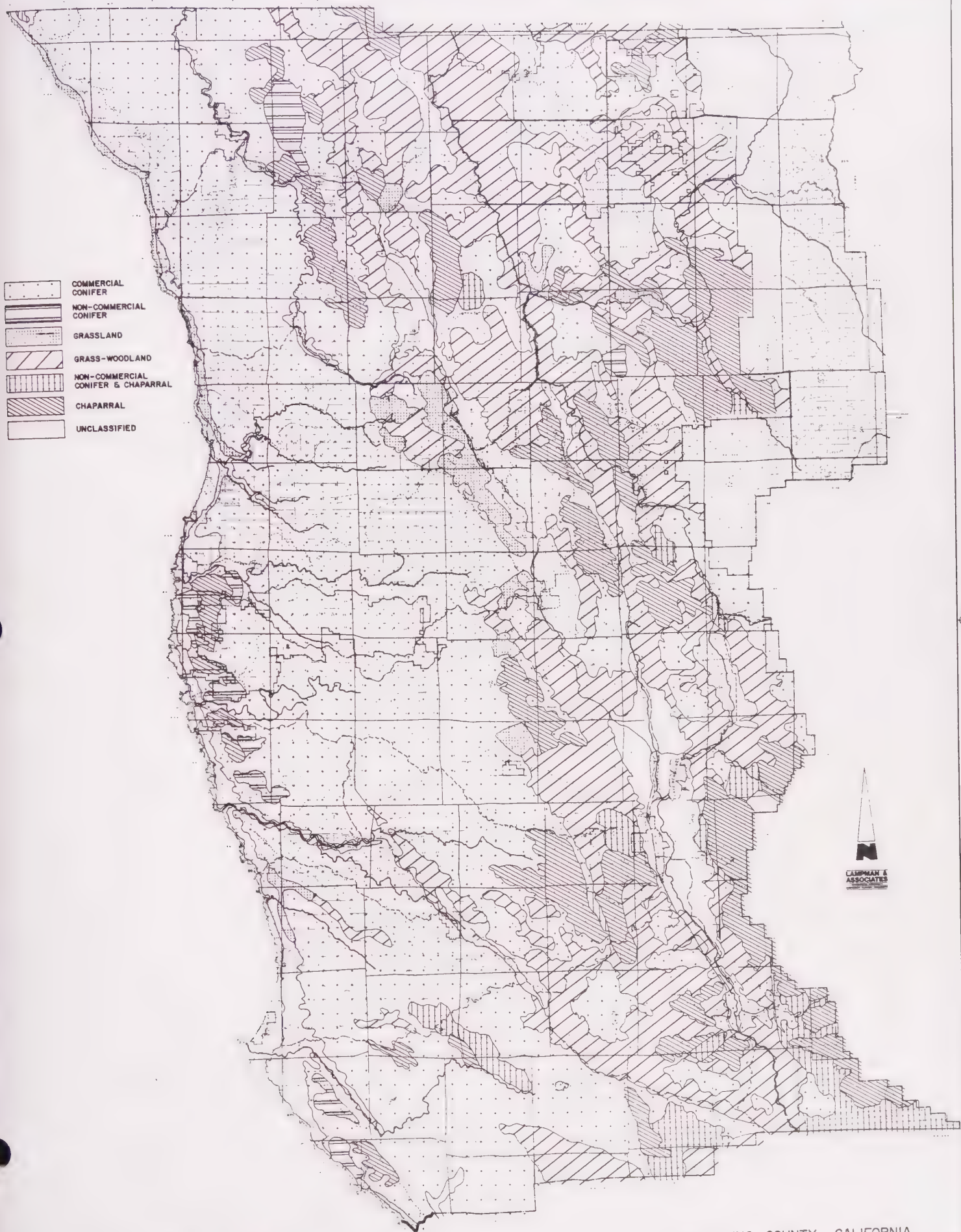
HOPLAND

MAILLIARD REDWOODS RESERVE











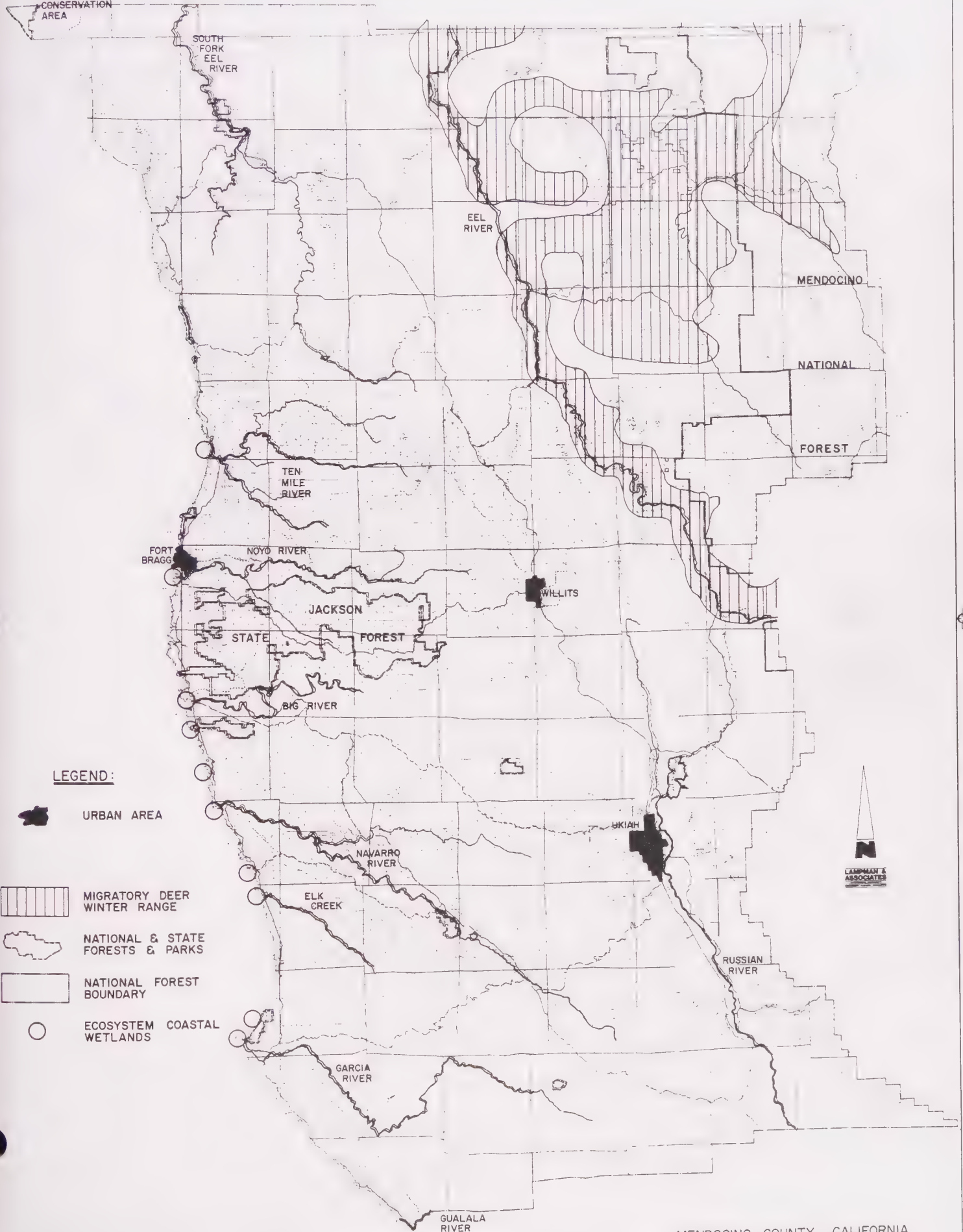








KINGS RANGE  
CONSERVATION  
AREA

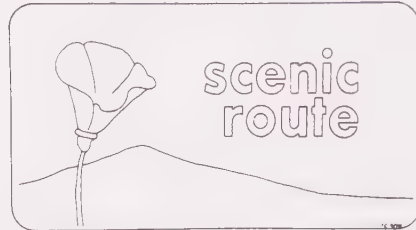




# CALIFORNIA SCENIC HIGHWAY SYSTEM

## MASTER PLAN OF STATE HIGHWAYS ELIGIBLE FOR OFFICIAL SCENIC HIGHWAY DESIGNATION

JANUARY 1, 1972



"STATE" "SOUTH" "NORTH"  
"WEST" AND "EAST" "NORTH" "SOUTH"  
"WEST" "EAST" "NORTH" "SOUTH"



**LAMPMAN &  
ASSOCIATES**  
GOVERNMENTAL CONSULTANTS  
SACRAMENTO PLANNING DIVISION



### LEGEND

- OFFICIALLY DESIGNATED PORTION
- IN MASTER PLAN-NOT OFFICIALLY DESIGNATED
- CONNECTING NATIONAL PARK AND MONUMENT ROAD
- STATE HIGHWAY SYSTEM AND LEGISLATIVE ROUTE NUMBER

0 10 20 30  
SCALE IN MILES





5

**LEGEND:**

**MINERALS**

- COAL
- CHROMITE
- CARBON DIOXIDE
- COPPER
- JADE
- LIMESTONE
- MANGANESE
- MINERAL SPRINGS
- PETROLEUM
- PLATINUM
- QUICKSILVER
- SAND and GRAVEL
- GEOTHERMAL WELL

TSUNAMI HAZARD AREA

FLOOD PLAIN

WATERSHED BASINS

HARBOR DAMAGE AREAS  
 POTENTIAL HARBOR DAMAGE AREA

1 to 5 } EARTHQUAKE INTENSITY  
 6 to 10 }

EARTHQUAKE EPICENTER & APPROX. MAGNITUDE RANGE

FAULT - WELL DEFINED  
 FAULT - APPROX. LOCATION  
 FAULT - CONCEALED







# IX. SCENIC HIGHWAYS



# MENDOCINO COUNTY GENERAL PLAN

## SCENIC HIGHWAYS ELEMENT

ADOPTED BY  
MENDOCINO COUNTY BOARD OF SUPERVISORS

APRIL 13, 1977

Mendocino County Planning Department  
Office: 589 Low Gap Road  
Mail: Courthouse  
Ukiah, CA 95482





## SCENIC HIGHWAYS ELEMENT

The Scenic Highway Element of the Mendocino County General Plan was adopted in 1977. The element was not found to be deficient by the court and consequently was not revised during the 1978 - 1981 General Plan revision project. No amendments were necessary to achieve consistency with other elements of the General Plan.

The Senic Highway Element is contained in a separate document of 24 pages.





# Scenic Highways Element of the Mendocino County General Plan

APRIL, 1977

WILLIAMS, PLATZEK & MOCINE / CITY & REGIONAL PLANNING



SCENIC HIGHWAYS ELEMENT  
MENDOCINO COUNTY, CALIFORNIA  
A NEW ELEMENT OF THE COUNTY GENERAL PLAN

REVISED  
BY THE  
SCENIC HIGHWAYS ELEMENT CITIZENS ADVISORY COMMITTEE

UNANIMOUSLY APPROVED BY THE PLANNING COMMISSION  
20 January 1977

UNANIMOUSLY APPROVED BY THE BOARD OF SUPERVISORS  
20 April 1977



## SCENIC HIGHWAY ELEMENT COMMITTEE

### COMMITTEE

Anderson, Dale	Lerch, Albert
Artman, Larry	Locatelli, Irene
Bertsch, Ted	Marquardt, Don
Crofoot, John	Marvin, Elizabeth
Fraser, Don	McClellan, Helen
Grundman, Robert	Neil, Grace
Hammond, George (Chairperson)	Paulson, John
Krueger, Roger	Thomas, Alice
Lasselle, Sally (Vice Chairperson)	Welter, Ray
Lemos, Toni	Griffiths, T. W. (Resigned)
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Guest--Ben VanZandt (Cal-Trans)

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December 6, 1976

Mendocino County Planning Commission  
Mendocino County Courthouse  
Ukiah, CA 95482

Dear Planning Commission Members:

On behalf of the members of the Scenic Highways Element Citizens Advisory Committee, we are pleased to submit for your consideration the Scenic Highways Element of the County General Plan.

The document details policy recommendations based on over six months of intensive study and analysis of various routes in the county.

The Citizens Committee unanimously recommends that the Element be adopted by the Planning Commission and forwarded to the Board of Supervisors for approval.

Respectfully submitted,

SCENIC HIGHWAYS ELEMENT CITIZENS ADVISORY COMMITTEE

*George Hammond*  
GEORGE HAMMOND  
Chairman

*Philip Gorny*  
PHILIP GORNY  
Chief Planner

PG/mls



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## INTRODUCTION

### DEFINITION OF SCENIC QUALITIES

In considering scenic highways where regulation may become necessary on productive or potentially productive resource soils, primary consideration shall be afforded to sound production management to insure sustained yields from these resources.

Some people appreciate the grand and spectacular while others respond to the quaint or picturesque. Some find a rugged seascape inspiring while others prefer a gentle bucolic scene which evokes a sense of tranquility and peace. Both natural and man-made features contribute to scenic effect and the contrast between the two often enhances the quality of the visual experience. An example of mutual enhancement is the neat cultivated vineyard and farm house against a backdrop of natural rugged hills. Similarly, the contrast between a busy small-town scene and the surrounding quiet countryside can heighten the traveler's visual experience. Very strong natural features such as Squaw Rock, or man-made ones such as a lumber mill, add scenic interest by their forceful impact.

Mendocino County has a wealth of scenic features to please all tastes and by broad definition all its roads and highways could be considered scenic. There are however, two general categories of scenic features: man-made and natural. Neither of these categories in and of itself

prejudges a feature in regard to its aesthetics. Man through his ingenuity has the ability to construct features that possess or contribute to a visual impact that ranges from non-offensive to pleasing. He also has the ability to alter the natural environment in a manner that capitalizes on nature's methods of maintaining an equilibrium.

Because Mendocino County is heavily dependent on agriculture, there has been an historically slow growth rate. This has allowed the maintenance of a rural atmosphere that is characterized by small inhabited communities separated by vast expanses of vineyards, orchards, commercial forests, range land, mixtures of forest-chaparral, and ocean.

There is of late a trend developing that has caused the population pressures to exert an increasing influence on Mendocino County. Numerous subdivisions of large tracts of land and urban sprawl are a symptom of shifts in population. An increasing number of transients contribute to the population swell through their requirement for resident services such as food and lodging. Creating the methods by which the assimilation of the population influx is discharged will present a formidable problem to the local government. It is necessary to integrate the hopes and aspirations of all individuals ranging from property owners to visitors into a balanced program that will achieve the maximum benefit for all.

In developing this program, guidance will be offered for the maintenance of a visual appearance of the areas that can be seen from the county's highways through the recommended policies of this Scenic Highways Element

to the General Plan. While protection is offered as an alternative, it is not to be misinterpreted with exclusive non-use. To the contrary, development and alteration of the environment is an inevitable consequence of human activity. It would be a folly to ignore this characteristic and adopt a restrictive minority special interest stance that would be an affront to human rights. Therefore, the policies of protection in regard to viewshed matters should incorporate the principles of conservation. This is defined as the wise use of the resources.

As the population continues to expand, the pressures on the resources of Mendocino County will increase. As the people multiply, so must the jobs multiply. Hence economic development seems inevitable. What is to be the cost of this development? At present, Mendocino County has many beautiful, natural landscapes that give joy and meaning to its residents. This same scenery also brings pleasure to tourists who bring dollars to our local economy. Without protection, the scenic beauty of the land will be lost. This is especially true for those areas adjacent to highways. These areas are prime for development as they are accessible and visible.

Therefore, it is the intent of this Scenic Highways Element to provide for the protection and enhancement of our natural scenic highway environment for the present and future use of residents and visitors alike while protecting the rights of the property owner to the maximum possible extent consistent with this concept.

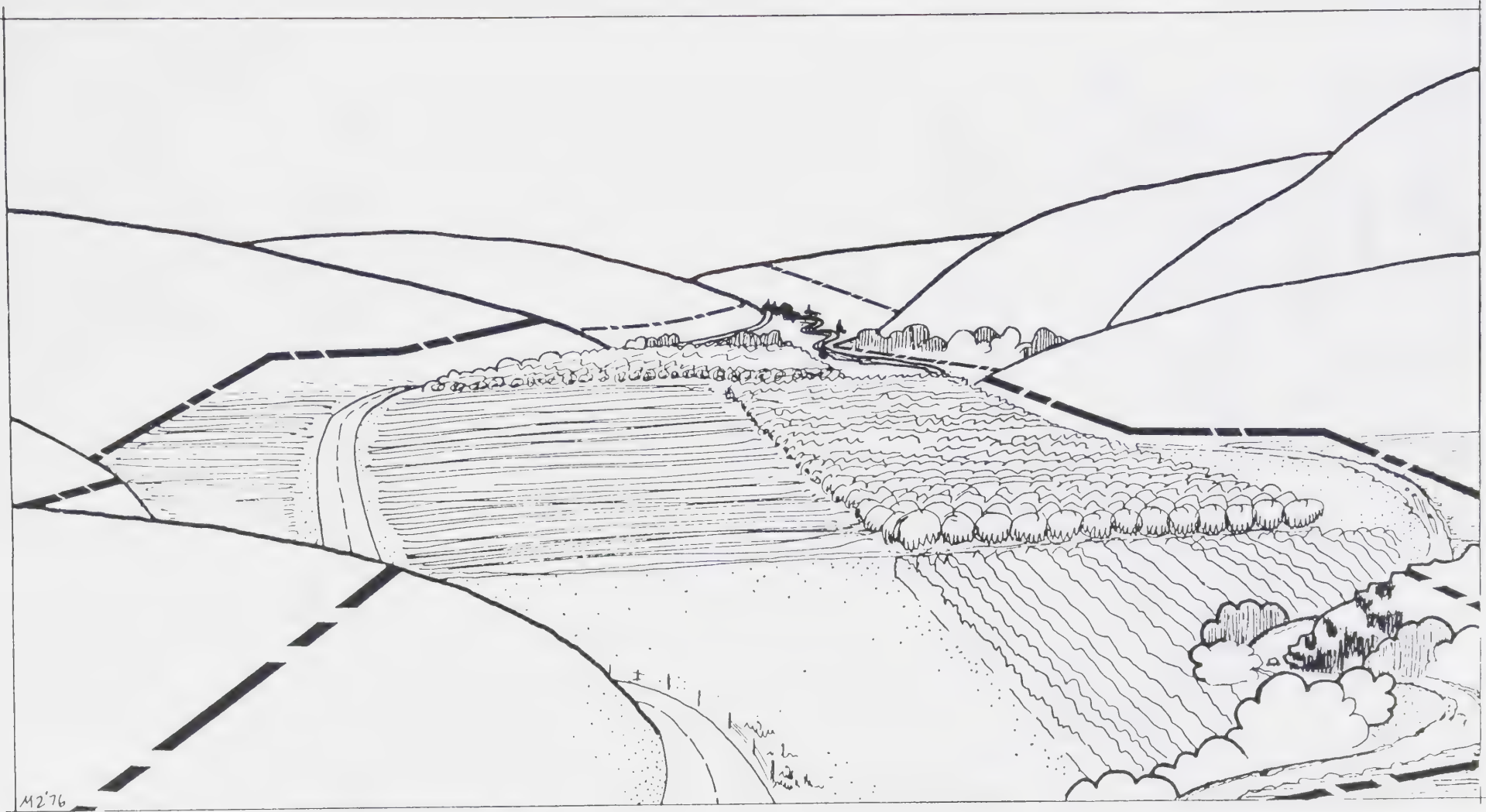
Since the Scenic Highways Element analyzes scenic resources to provide a basis for more detailed studies and action programs, it is helpful to

define and categorize the areas and features visible from the highways.

The following scenic qualities would apply to Mendocino County:

1. Rural-open grazing or grassland
2. Rural-intensive cultivation, usually orchards or vineyards
3. Deep commercial forest and public lands
4. Inland hills, valleys and ridges
  - a. close-up view
  - b. intermediate view
  - c. distant panorama
5. River views
6. Seascape
7. Historical site
8. Unique natural area
9. Small rural communities
10. Urban fringe
11. Heavy rural industry (eg., lumber mills)
12. Naturally sensitive areas subject to erosion or slides if developed
13. Natural wildlife and wildlife habitats

A highway may be designated for scenic treatment on the basis of heavy use even though it may not have natural scenic qualities or its scenic qualities have been marred by inappropriate development. To preserve existing scenic values or to make real improvements in quality, the view from the road must have integrity with all visible elements fitting and harmonious. This principle applies equally to rural Anderson Valley, the spectacular sea coast, the forests, or urban areas. This



The Scenic Corridor of a scenic highway includes land outside the highway right-of-way which contributes to the scenic value of the route. The boundaries follow property lines and other legal delineations; within these boundaries urban development should be kept to a minimum and policies adopted to preserve the scenic qualities of the highway.



makes it necessary to consider elements which degrade the scenic qualities of highways as well as those which enhance. Generally speaking, all actions which alter the natural form of the terrain tend to be detrimental. Grading and cutting of steep hillsides leave unsightly scars. Cutting the top off a hill and perching a building at the highest point destroys the natural form and creates disharmony. Some buildings are particularly unsightly when they are undistinguished blocky structures and/or insufficiently landscaped. Derelict buildings and unkempt lots blight views as do junkyards and wrecking lots which are unscreened. Outdoor advertising structures (including buildings which are advertisements by design) are frequently the worst offenders. Even a small, brightly colored sign against a scenic background will lessen the quality of the view since our eye will fasten on the bright foreground distraction rather than on the quieter scenic background.

#### AUTHORITY

The California State Government Code Section 65302 (h) requires a scenic highways element of all city and county general plans "for the development, establishment and protection of scenic highways". It provides for local planning of official and unofficial scenic routes. Official scenic highways are designated by the State Director of Transportation after plans have been adopted and submitted by the local jurisdictions. Highways eligible for such designation are listed in the Streets and Highways Code Section 263.

## DEFINITIONS

Scenic Corridor: The visible land area outside the highway right-of-way generally described as "the view from the road".

Official State Scenic Highway and Official County Scenic Highway: Scenic highways officially designated by the State Director of Transportation after application from local jurisdictions and on the list of eligible highways found in Section 263 of the Streets and Highways Code.

The Scenic Highways Element is not a corridor study, but rather provides the basis for such studies, either by Cal-Trans or the County.



## SUMMARY

The Scenic Highways Element is one of the nine general plan elements mandated by the State. The purpose of the element is to consider scenic qualities that may be present within route corridors and develop programs for protecting those qualities.

This report contains a description of what is considered scenic, the importance of scenic quality and some of the problems. The report also contains generalized analyses of State Highways within the County and recommended policies for the protection of the scenic quality of their corridors.

The following Routes are recommended for adoption as scenic highways: #1, and portion of #162.

Adoption of the Routes as Scenic Highways would not automatically impose controls upon land within their corridors.

Only after acceptable programs have been formulated would the Scenic Highways Element have an impact on private property along the scenic highways. Even then, the impact at most would cause only minor discomfort to the individual while providing major benefit to the County and State.





## RECOMMENDED POLICIES

Following is a list of policies recommended for consideration by the Planning Commission. The policies mainly are based upon criteria included in "The Scenic Route", prepared by the State Interdepartmental Committee on Scenic Highways. The policies should be reviewed by the Planning Commission, revised as necessary and adopted as the first major step in initiating action to protect Mendocino County's scenic highway corridors.

1. The following routes are recommended for designation as scenic highways:
  - a. State Route 1 (91 miles)
  - b. State Route 162 to Inspiration Point (30 miles)
2. For the highways recommended for designation, corridor studies shall be initiated to determine the scenic qualities requiring protection and leading to the establishment of corridor boundaries.
3. Corridor boundaries shall include varied and important views of natural and man-made scenic resources and, wherever possible, shall follow property lines, zoning or district boundaries, and other legal delineations to facilitate administration.
4. The corridor study for each highway shall be the basis for a protection plan prepared by the County prescribing the manner in which the scenic quality of the corridor would be protected.
5. County zoning and subdivision ordinances shall be revised, as necessary, to be consistent with the scenic highway corridor programs.

6. Urban development shall be kept to a minimum in rural portions of the scenic corridor.
7. All present or future lands and facilities owned or operated by the County, State or Federal Government shall be properly maintained, especially in regards to sanitation facilities, litter control, water pollution and fire control, or shall be closed to public use. Only when there are provisions made for adequate maintenance and supervision shall the County, State or Federal Government open lands or establish facilities for public use along the scenic highways.
8. Heights and setbacks of structures shall be regulated so as not to obstruct important views from scenic highways.
9. Unsightly uses shall not be permitted unless found to be necessary; in which case they should be screened by effective planting, grading, or fencing.
10. On-premise signs shall be limited to the minimum number, type, height and size necessary for identification. An appropriate County sign ordinance is recommended for adoption.
11. Off-premises outdoor advertising shall not be allowed within the scenic corridor, except for information panels giving advance notice to motorists.
12. New or relocated utility lines shall be placed underground in accordance with the utility rules and regulations on file with the California Public Utilities Commission.
13. Grading and earthmoving operations shall be performed with a minimum of disturbance to natural ground lines and shall result in a naturalistic form. Erosion control measures shall be provided.

14. Native vegetation shall be planted to hide scars and blend earth-work into the natural landscape.
15. Whenever possible and necessary, quarries shall be restored to an attractive appearance before abandonment.
16. Edges of water bodies shall be preserved in their natural condition in conformance with the regulations of appropriate agencies.
17. Existing specimens and stands of trees and other plant material of outstanding scenic value should be identified within the corridor study and shall be preserved wherever possible.
18. Timber operations shall conform to the Z'berg-Nejedly Forest Practices Act of 1973, as amended.
19. Selective clearing may be done to reveal important views from the highway when within the highway right-of-way.



## ROUTE ANALYSIS

This section contains generalized route analyses for the major highways and roads in Mendocino County. The analyses include 1973 traffic volumes as tabulated by Cal-Trans. This year is cited since 1974 was an unusual year due to gasoline shortages. The 1975 volumes are not yet available.

The analysis of Highway 1 includes a summary of the State Coastal Commission's preliminary recommendations for coastal routes and some discussion of possible location action.

The Scenic Highways Element Citizen Advisory Committee recognizes the scenic value of all highways in the County. The Committee reviewed all State and County routes and coordinated recommendations from various general plan committees around the County such as those established in Round Valley, Anderson Valley, and the South Coast.

In making its recommendations, the Committee considered this element in relation to the land use, circulation (transportation), safety and recreation elements of the current general plan, as well as in relation to socio-economic ramifications.

During Committee deliberations, the following routes were thoroughly discussed, but are not included for recommendation as scenic highways at this time:



State Highway 101	Flynn Creek Road
State Highway 128	Low Gap/Orr Spring Road
State Highway 175	Mountain View Road
State Highway 208	Airport/Albion Road
State Highway 253	Usal Road
Forest Road #7 (Covelo)	Greenwood Ridge Road
Little River Airport Road	
Comptche Road	
Highway 20 east of Highway 101	

### State Highway #1

State Highway 1 for its full length along the coast in Mendocino County.

Length of Route: 91 miles.

Width: Generally two-lane, except for brief segment of four-lane expressway in the Mendocino area.

1973 Traffic Volumes: Average Daily Traffic (peak month) ranges from 1,400 to 16,200. The higher figure was at Fort Bragg. Volumes along undeveloped stretches of the coast are in the order of 2,000 to 4,000. Average Daily Traffic (annual): 750-12,700.

Topography: The highway generally runs along a coastal terrace about 100 feet above the ocean, immediately next to and above the ocean cliffs, although it moves down into river gorges, climbs along cliffs and makes a few detours across jutting headlands.

Existing Land Uses: Low intensity urban development in Fort Bragg, Point Arena and Mendocino communities; small service centers at

Rockport, Westport, Cleone, Casper, Little River, Elk, Albion, Manchester, Anchor Bay and Gualala. Extensive forest and grazing land; stretches of ocean front homes; fishing harbor at Noyo.

Proposed Land Uses: Continuation of existing pattern.

Physical Features of Outstanding Character: Ocean views, rocky cliffs, narrow beaches, streams cutting through gorges and extending into mountain canyons, pine, cypress and redwood trees; heavy undergrowth with ferns and rhododendrons.

Man-Made Features of Outstanding Character: High bridges, water towers, farm buildings, wharves, weathered seacoast architecture of residential and commercial structures.

Disruptive Factors: Buildings too close to road and crowded together blocking views; distracting signs.

Other Pertinent Factors: Highway 1 is within the jurisdiction of the State Coastal Zone Conservation Commission. The Preliminary Coastal Plan contains the following scenic highways recommendations. The State Coastal Act now provides for them in Section 30251.

1. State Highway 1 and all eligible State Highways and County roads should be designated as part of the Scenic Highway Program (p. 145).
2. Scenic routes shall be designed, constructed and maintained with the highest regard for aesthetic considerations (p. 146).

3. Viewshed and roadside controls shall be required to protect the scenic qualities of roadway scenic corridors (p. 147).
4. Highway 1 in rural areas of the California coastline shall be kept a scenic two-lane highway. Improvements shall be limited to those needed for safety and for developing vista areas, parking and other amenities of scenic routes (p. 144).

In 1966 the County Planning Commission asked the State to conduct a scenic highway study of Route 1. This was done during 1966 and 1967 for a 16-mile portion between the intersections of Route 1 with Route 128 and Jughandle Creek. Although the study was favorable, the designation was not made. Also, a portion from the Sonoma County line to Route 128 was studied.

Summary: Highway 1 in Mendocino County is well known for traversing scenic terrain of outstanding quality.

#### State Highway 162

State Highway 162 from junction of Highway 101 to Inspiration Point.

Length of Route: Approximately 30 miles.

Type and Width: Two-lane highway.

Traffic Volume, 1973: Average daily traffic, (peak month): 1,050 at junction of 101; 720 at Dos Rios; 2,200 near Covelo. Average daily traffic (annual): 570 at junction of 101; 400 at Dos Rios, 1,200 near Covelo.

Topography: Highway 162 leaves 101 following Outlet Creek down to its junction with the Eel River at approximately 1,050 feet elevation. It continues along the Eel, falling to about 900 feet at Dos Rios where the Middle Fork joins the main Eel River. The railroad follows the same stream course to Dos Rios. There the railroad heads north following the Eel while Route 162 continues east up the Middle Fork for a short distance. At an elevation of approximately 1,100 feet the highway leaves the River, rising rapidly up the side of the rugged canyon. It traverses rugged high country reaching over 2,000 feet before making a sharp descent into Round Valley. The Valley floor is approximately 50 square miles, almost level but sloping gently to the southeast. It drains by a circuitous route into the Middle Fork of the Eel. Covelo, in the north central Valley, is at approximately 1,400 feet elevation. Highway 162 traverses the Valley on a north-south section line passing through Covelo, officially ending a few miles north.

Existing Land Uses: Along the western portion of 162: range land, brushy forest, some unused land in hill area; gravel extraction plant at Longvale; agriculture in Round Valley; rural small town uses in Covelo.

Proposed Land Uses: Continued agriculture in Round Valley; minor urban expansion in Covelo.

Natural Features of Outstanding Character: Entire route is highly scenic and unspoiled; outstanding views of river canyon and rock

formations as road rises from the Middle Fork to the western summit above Round Valley; views of the Valley from crest on 162 offer a spectacular contrast to the forested hill views and snow covered peaks ringing the Valley (usually snow covered until July).

Man-made Features of Outstanding Character: Agricultural fields and orchards in Valley; rural character of Covelo; Indian cultural and tourist facilities planned for near future near Covelo.

Disruptive Elements: Narrow bridge and right angle turn in Highway 162 at Dos Rios is unattractive, dangerous and frequently closed in winter, (Under study by Cal-Trans and due for corrective improvements within next few years). The bridge will be replaced as funds are appropriated by the State Legislature.

Other Pertinent Factors: About one quarter of Highway 162 passes through areas zoned for Forest Preserve with the rest in the A-1 unclassified zone. Cal-Trans shows a "proposed State Highway, routing not determined" following the general alignment of Forest Road 7. The Round Valley General Plan Advisory Committee adopted two pertinent policies in June, 1975: Highway 162 should be studied for possible inclusion in the Scenic Highway system and Forest Road 7 should be improved to an all-weather highway. Forest Road 7 should be studied for consideration and inclusion into the Scenic Highway system when it is improved to an all-weather highway. These policies were adopted because the residents place a high value on the scenic

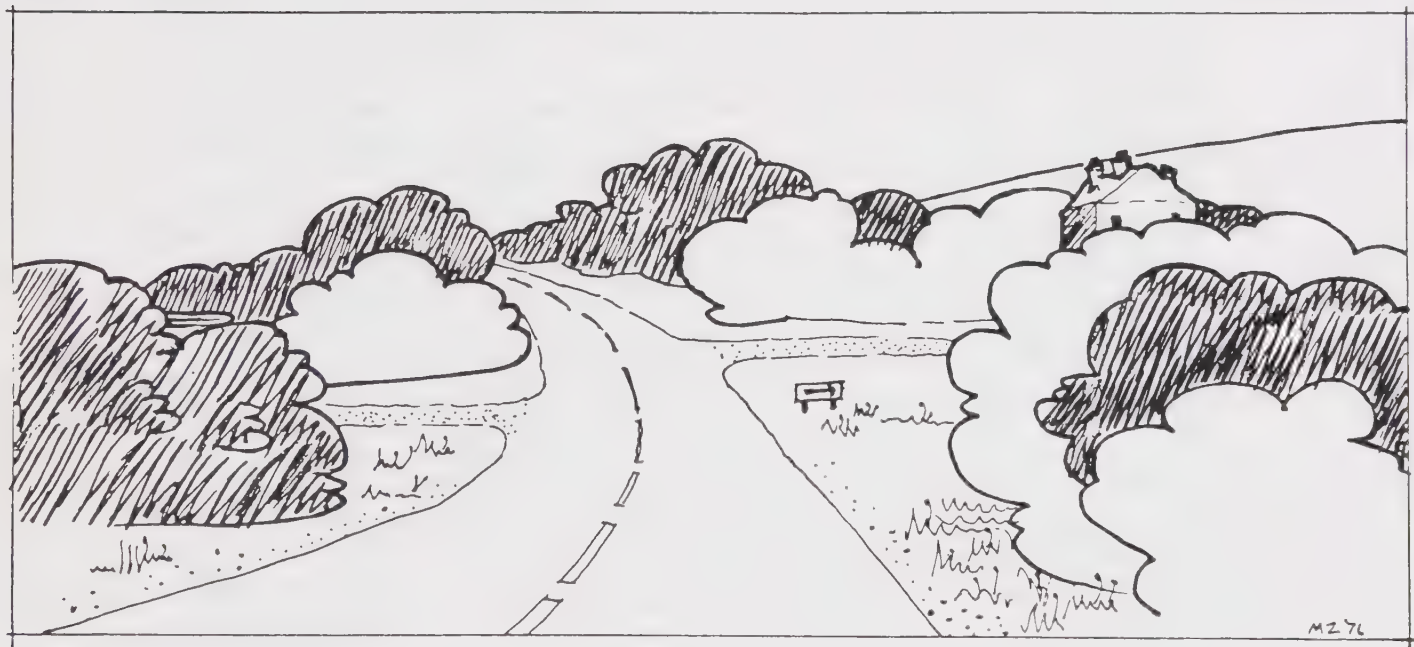


character and also realize that these same qualities can be a major economic asset to the community, if protected and enhanced. With the possible decline in lumbering, a new economic base and local job source would need to be found if Round Valley and Covelo are to continue to provide a good living environment. The community desires to promote compatible tourist and outdoor recreation enterprises as the best way to solve its problems. Thus, the personal aims and the economic aims coincide, both requiring preservation and enhancement of the scenic qualities of access roads.

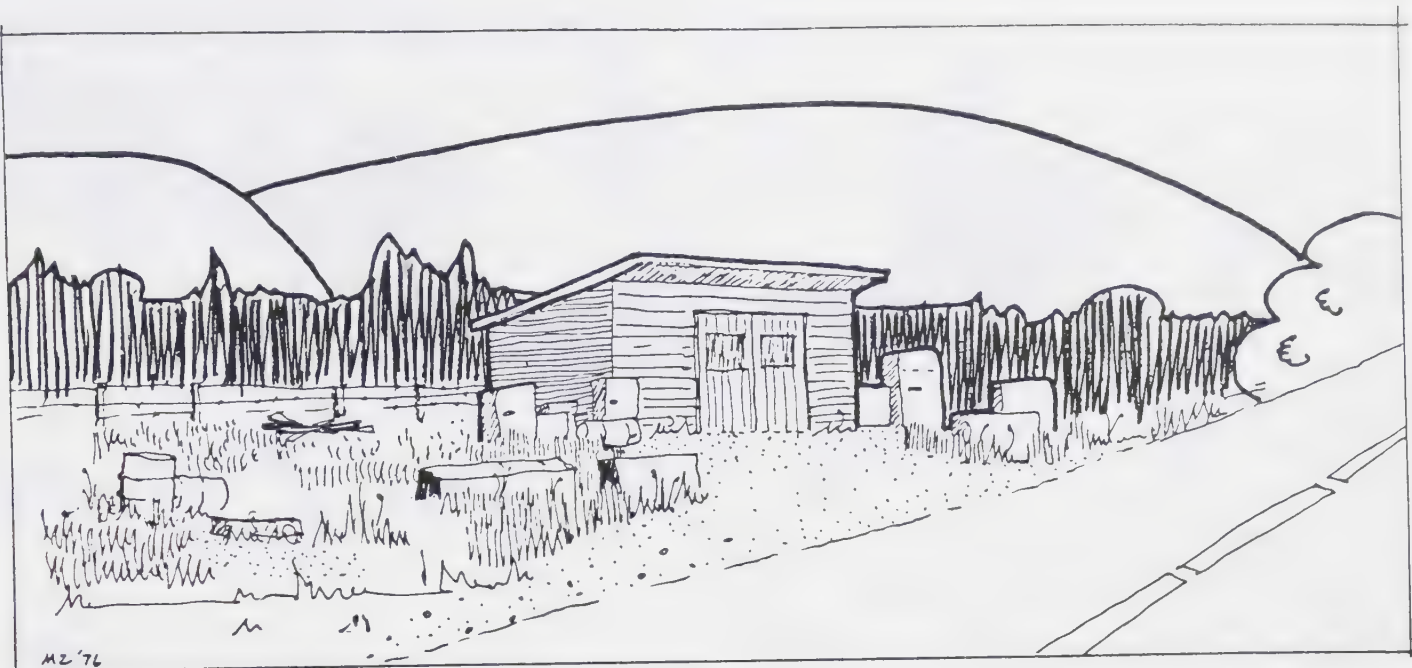
Summary: This route is one of the most scenic in the County and would deserve protection even if the economic needs of the residents of Round Valley were not taken into account. Consideration of both factors increases the need for action. Extension of Highway 162 through the National Forest and improvement to all weather status would open a new route (in addition to Highway 20) from the Sacramento Metropolitan Area, through a beautiful outdoor recreation area, into Round Valley and on to the coast. It definitely would increase the scenic and recreational opportunities for residents of northern California as well as job opportunities in Round Valley and should be considered for the near future. Present low traffic volumes would certainly increase.



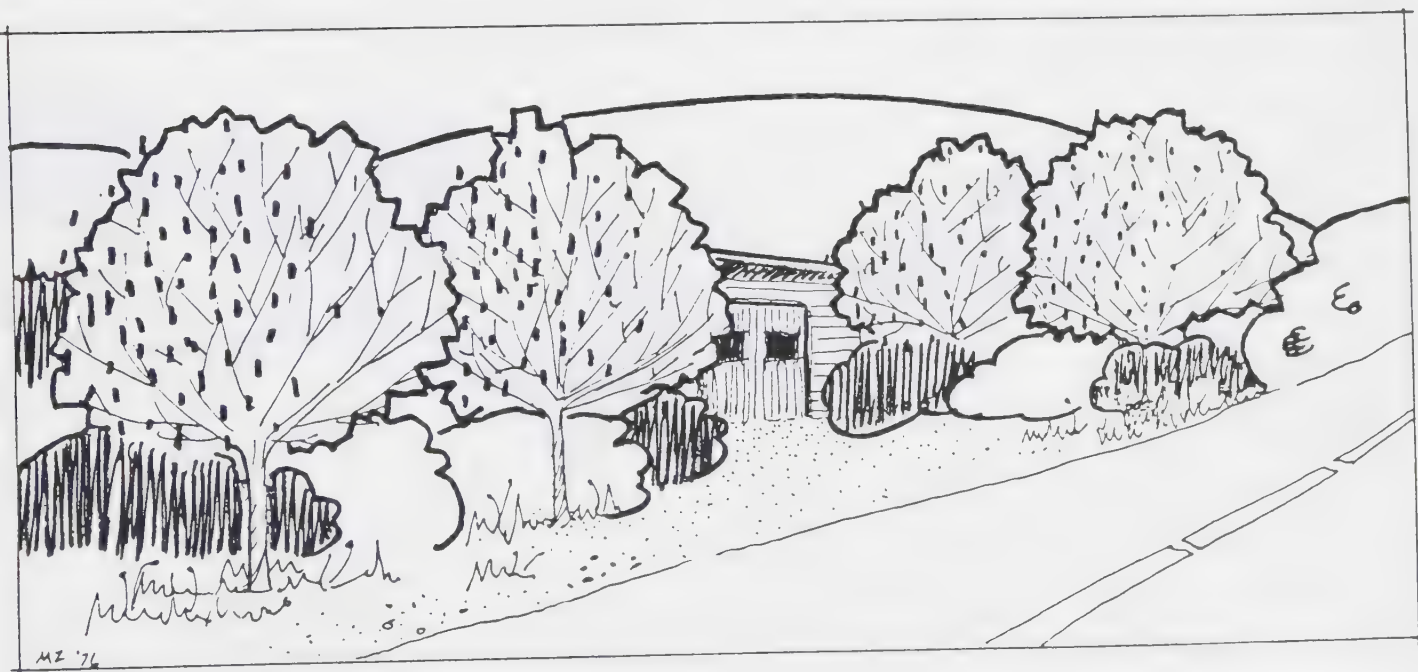
Industrial and urban development close to the roadway reduces its scenic quality.



Setback regulations and height limitations help to preserve the rural character of the scenic route.

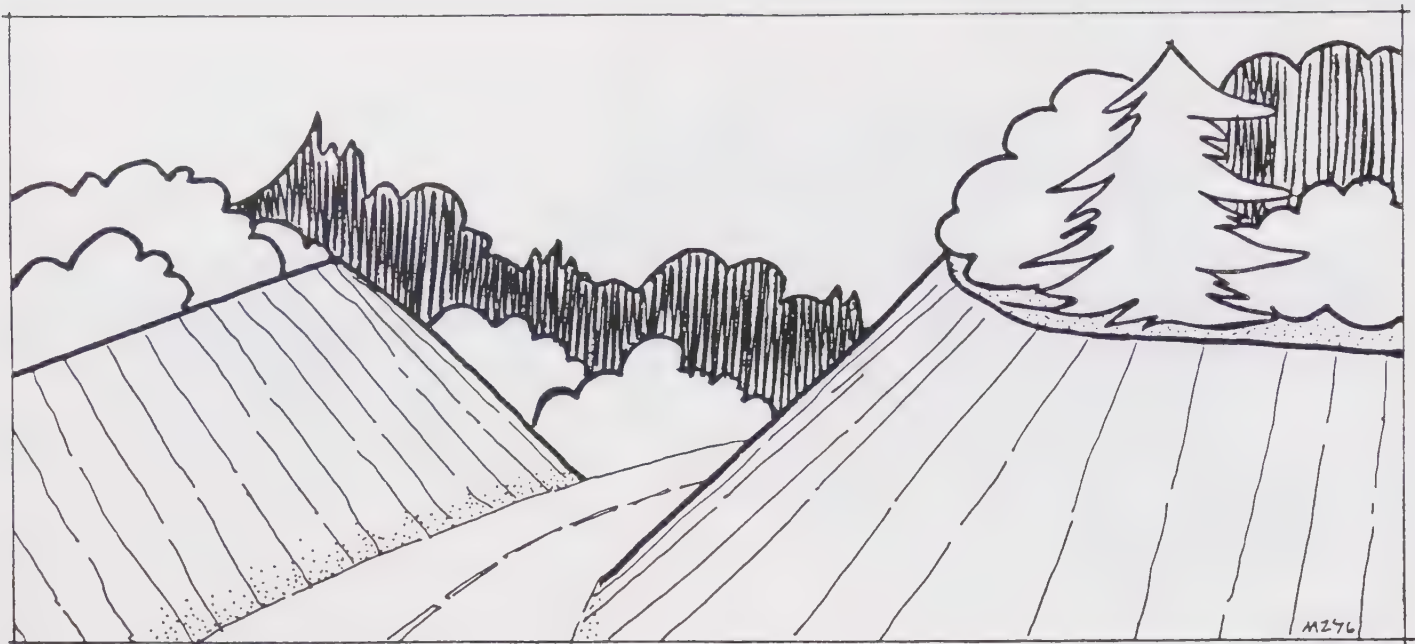


Unsightly uses such as junkyards, industrial areas, and quarries detract from the experience of a scenic highway.

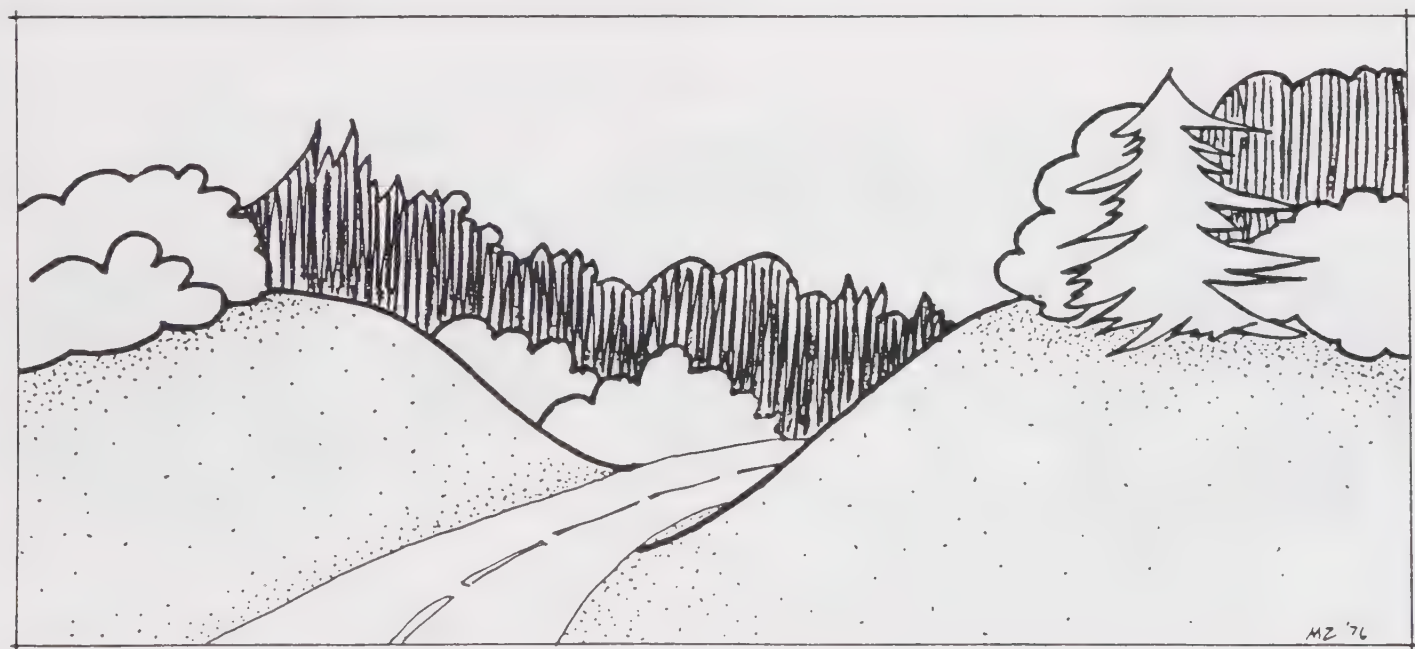


The use of natural materials to screen these uses allows them to remain without destroying the scenic qualities of the route.

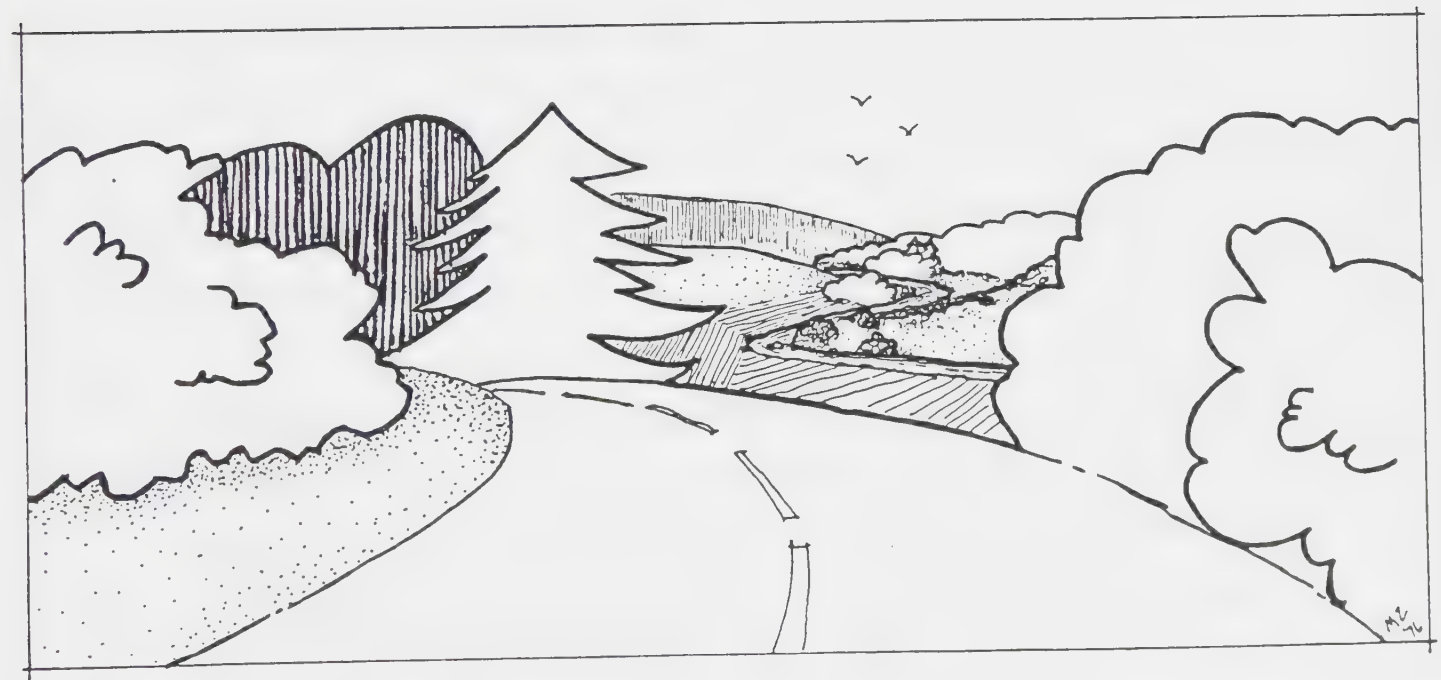
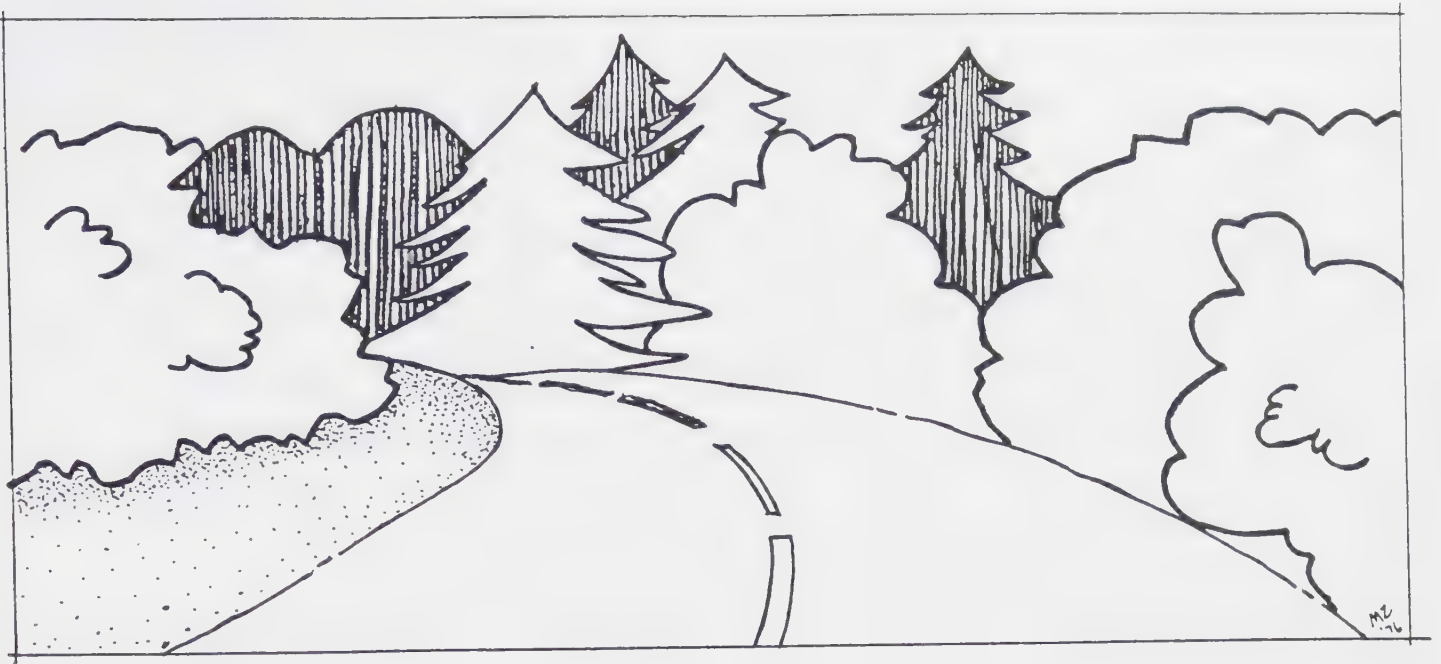




Hard-edged, steep cuts and fills detract from the natural character and pose an erosion hazard.



Earthwork should be rounded to blend in with the natural topography and preserve the scenic character.



Careful selective cutting of trees along the roadway can reveal important views and improve the scenic quality of the route.





## PROCEDURE FOR DESIGNATING OFFICIAL SCENIC HIGHWAYS

The corridor studies necessary for official designation of a highway as a Scenic Highway must be initiated by the jurisdiction which controls the adjacent lands. The responsibility for the corridor study may be delegated to a department, employee, commission or committee.

When such a study is initiated the District Director should be notified. The Transportation District will then undertake a Corridor Survey which will be joined with the local jurisdiction's study to form the Scenic Highway Report.

A specific plan and program must be developed by the local jurisdiction assisted by the District Director's staff. This plan and program will insure the protection and enhancement of the existing natural and man-made scenic resources that contribute to the Highway's being included in the State Master Plan for Scenic Highways.

The plan and program are reviewed by the Transportation District's staff and forwarded to the Interdepartmental Committee on Scenic Highways. After review by the Interdepartmental Committee the reports are forwarded to the Scenic Highway Advisory Committee. The Advisory Committee reviews the information and recommends to the Director of the Department of Transportation whether the highway should be designated.

County roads may be designated by the State Director of Transportation, upon application by the County Board of Supervisors, after the State Director of Transportation has found that all requirements have been met. The standards and requirements for a state scenic highway also apply to a county scenic highway; however, Cal-Trans will not undertake a County Scenic Highway Study, but can furnish assistance to County staff.

## RECOMMENDED ACTION

The route analyses point out that there are abundant scenic qualities to which the highway traveler in Mendocino County is exposed. The analyses also suggest that these qualities are impaired to a minor degree and subject to further degradation by inadequately controlled development.

The extreme action would be to move at once to draft scenic corridor regulations, determine corridor boundaries for the routes described in this report and apply the regulations to those corridors. The problem with this approach is that it does not take into account the attitudes of property owners and commercial interests who may fear economic loss due to such controls. Also, others in the County disapprove of and have a lack of trust in extensive regulation of land.

As with all of the general plan elements, there must be a distinction made between the satisfaction of long-range objectives and the implementing measures which carry them out. The policies for scenic highways may seem severe to some if they are immediately applied to all property along the described routes. However, they need not be severe if programs to carry out the policies are applied gradually, consulting those affected.

Therefore, it is recommended that, after review and adoption by the Planning Commission, the Board of Supervisors adopt the Scenic Highways

Element of the General Plan as a long-range guide to the protection and enhancement of the scenic qualities of Mendocino County.

It is further recommended that the Board formulate an implementation program based upon the recommendations of a County-wide Citizens Scenic Highways Committee. The Committee, with County staff assistance, would survey the adopted routes, note problems and assets, consult with property owners and other interested persons and develop a proposed program for the protection of scenic corridors.



## RELATION OF THE PLAN TO THE CALIFORNIA ENVIRONMENTAL QUALITY ACT

In compliance with Section 15148 of the California Administrative Code, this plan document also serves as the Environmental Impact Report for the Scenic Highways Element of the Mendocino County General Plan. The required elements of the Environmental Impact Report are listed below, followed by the environmental statement, or, in cases where the statement is included in the text of the report that section is identified.

1. Description of the Project: The Scenic Highways Element is one of the nine mandatory general plan elements required by State law in order to foster local initiative for conserving the State's scenic beauty along selected State and local highways throughout California. The element describes the State scenic highway program, provides a generalized inventory of selected routes within the County, recommends policies designed to protect scenic qualities and suggests further action.
2. Description of Environmental Setting: Route Analyses, pages 11 -17.
3. Environmental Impact of the Proposed Action: The project would have no direct environmental impact. Its effect would be to encourage consideration of the scenic quality of highway corridors and to discourage changes within the corridors that would be detrimental to the scenic quality.
4. Adverse Environmental Effects Which Cannot be Avoided if the Proposed Project is Implemented: None.

5. Mitigation Measures Proposed to Minimize the Impact: Although the Scenic Highway Element has no environmental impact requiring mitigation, it does propose methods of mitigating the impact of other projects; see Recommended Policies, pages 8-10.
6. Alternatives to the Proposed Action:
  - a. No project would be in violation of the State requirement to include a Scenic Highways Element in the General Plan.
  - b. The Element could recommend fewer, less restrictive policies but would then conform less with the intent of State law.
  - c. The Element could contain more detailed inventory and analysis of County road corridors and their scenic qualities. This alternative would require more time and a larger budget than was available.
7. Relationship Between Local Short-Term Use of Man's Environment and the Maintenance and Enhancement of Long-Term Productivity: The Scenic Highways Element is intended to mitigate adverse effects of local short term use of man's environment, as reflected in future projects within scenic corridors. This would help to maintain and enhance long-term productivity of scenic quality.
8. Irreversible Environmental Changes Which Would be Involved in the Proposed Action Should it be Implemented: None; failure to implement would contribute to gradual scenic deterioration.
9. Growth-Inducing Impact of the Proposed Action: The Scenic Highways Element proposes policies which would protect scenic qualities of the most visible portions of Mendocino County, thereby preserving its desirability as a place to live and to visit. The extent to which this induces growth is not measurable and would

have no noticeable effect on projected trends. Some elements of growth within the County would be influenced either by being modified in character or by locating outside the scenic corridors.

11. Organizations and Persons Consulted: Philip Gorny, Chief Planner and Charles Frank, formerly Planner II, Mendocino County Planning and Building Department; Ben Van Zandt, Cal-Trans; Pacific Gas and Electric Company officials; Masonite Corporation officials; Williams, Platzek and Mocine.



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